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A Recent Installation of "UNION" CAR RETARDERS

***Saves 65 per cent
per Freight Car Humped***

Following the recent installation of
"Union" Model 31 Electro-Pneumatic Car
Retarders in an important classification

yard, the cost per car humped was
duced 65 per cent.

And, in addition, there was a substan-
tial saving in loss and damage. The
savings were effected under exist-
ing traffic conditions. You, too, can real-
ize similar savings by following this ex-
ample. Our engineers will be glad
to cooperate.



UNION SWITCH & SIGNAL COMPANY

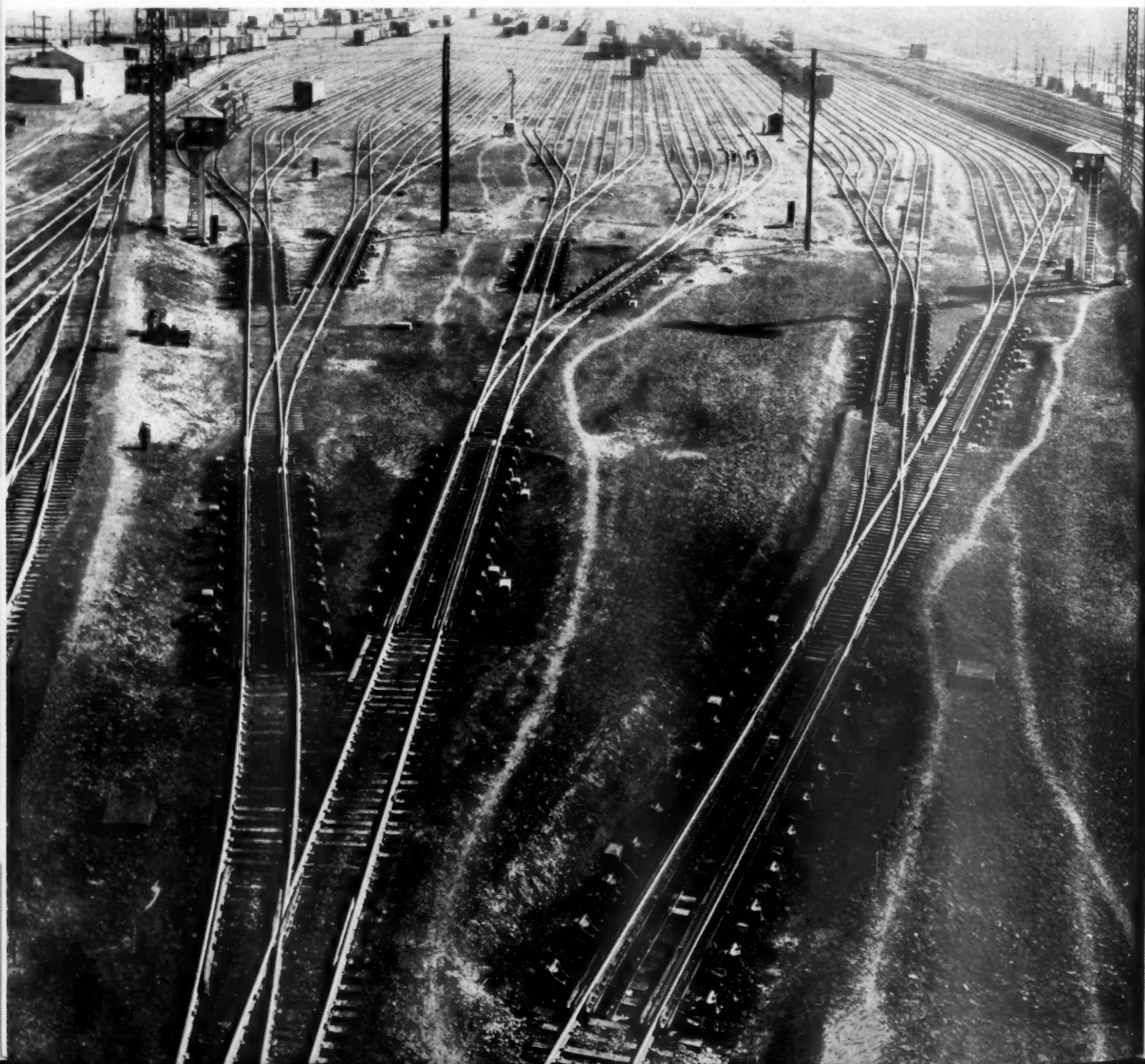
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RAILWAY AGE

The Wage Controversy and After

The action of the railway executives at their meeting in Chicago on November 4 in abandoning their movement for a 15 per cent reduction in wages illustrates the place to which the railways have been reduced as a part of the system of "free enterprise" that formerly existed in this country.

In his testimony before President Roosevelt's wage fact-finding board, J. J. Pelley, president of the Association of American Railroads, speaking for the chief executives of all the railways, made these statements: "What I want to say to the board is that there is no plan, there is none that can be made, there is none that can be put into effect, that will meet this emergency that we are in now. There is nothing that can be done for this railroad industry that would obviate the necessity of prosecuting this wage reduction to the last. . . . We (railway executives) went through this thing from one end to the other before this wage movement was started, and I know from my own knowledge that this (wage reduction) is the only way out for us." Nevertheless, speaking for these same railway executives, Mr. Pelley on November 4 wired President Roosevelt that the notices of wage reductions effective on December 1 would be withdrawn.

How Much "Free Enterprise" Is Left?

Why did the railway executives abandon what their principal spokesman only a few days before had solemnly declared was "the only way out for us"? Because they did not believe they could afford to fight a strike in which the labor unions would have at least the moral support of the government and the railways probably would not be afforded police protection—in other words, because the railway executives did not believe they could beat the government and organized labor combined.

Last March, in response to a petition by railway management for an advance of 15 per cent in freight rates, the Interstate Commerce Commission authorized an advance of about 5 per cent. Two weeks ago an emergency board appointed by the President made a report in response to a demand of the railway managements for a reduction of 15 per cent in wages, holding that they should make no reduction at all. The railway executives had full legal power to go ahead and make the 15 per cent reduction or any part thereof; but they decided against doing so not only because of the fear of a strike, but also because of the backing given the

labor unions by the President and his emergency board in public statements opposing a reduction.

Anybody can have and express any opinion he likes regarding what the railway executives should have done; but it is practically certain that in the same circumstances any other group of American business men would have decided as they did. They have now done what the government has told them to do regarding both freight rates and wages because, regardless of differences in law concerning these matters, they have not felt any more really free to fix wages than to fix rates. To what extent is an industry still a part of a system of "free enterprise" when government dictates to its management both the rates (or prices) it shall charge and the wages it shall pay—especially when its payroll is consuming 52 per cent of its gross earnings?

Business Improvement and Railway Results and Prospects

The great railway wage controversy is now history, and probably it would do less than no good at all to thresh it over at present. Let us, then, turn our faces to the future. What are the immediate and more remote prospects of the railways? In its discussions of the wage matter within the last several months this paper repeatedly said there was one thing, and only one thing, that could enable the railway industry to bear present wages—viz., a large increase in its traffic and gross earnings. This would have to be caused principally by a large expansion of production and commerce, although it could be aided substantially by federal and state legislation equalizing competitive conditions in transportation.

The most encouraging development now under way is the increase of traffic and gross earnings that actually is occurring. The real bottom of the great depression was reached over six years ago in the late summer of 1932. Since then there have been four non-seasonal improvements of freight loadings. The first was in the last one-third of 1932 and was 17 per cent. The effect produced upon net operating income was remarkable. It increased from less than \$12,000,000 in July to \$28,400,000 in August; to almost \$50,000,000 in September and to almost \$64,000,000 in October. The second non-seasonal improvement in freight loadings occurred in the four months April-July, inclusive, 1933, and was 27 per cent. It caused net operating income to increase from \$10,500,000 in March to \$19,000,000 in April,

\$41,000,000 in May; \$59,500,000 in June and \$64,300,000 in July. The third non-seasonal increase began in August, 1935, and continued almost without interruption for twenty-two months or until May, 1937, when, allowing for seasonal differences, freight loadings had become 37 per cent larger than in July, 1935. As a result, in spite of wage advances meantime, net operating income increased from \$440,000,000 in the twelve months ending with May, 1935, to \$717,000,000 in the twelve months ending with May, 1937, or 63 per cent.

The fourth non-seasonal increase of freight loadings during the depression began immediately after the "recession" reached its bottom about the middle of last May, and has continued until the present time or about six months. It caused loadings in the entire month of October to show a 15 per cent more than seasonal gain over loadings in the entire month of May. This five month's increase was relatively slower than that made in the last one-third of 1932 and that following the banking crisis in 1933, but it has had highly encouraging effects upon net operating income. In May, 1938, the worst month of the "recession," net operating income was only \$16,500,000. In June it increased to \$25,000,000; in July to \$38,400,000; in August to \$45,400,000, and in September to \$50,400,000. By a coincidence it was almost exactly the same in September, 1938, as in September, 1932; and if the gain in freight loadings continues at its present pace, net operating income in the entire last one-third of 1938 should be about the same as in the last one-third of 1932, when it was \$182,000,000. In that case there would be a remarkable similarity between the financial results of railway operation in 1932, the worst previous year of the depression, and in 1938. Net operating income in the first two-thirds of 1932 was \$152,295,000, and in the first two-thirds of 1938 was \$154,712,000, and if it should be about the same—\$182,000,000—in the last third of 1938 as in the last third of 1932, it would be for the entire year about the same as in 1932, when it totaled \$334,325,000.

Significant Expansion of Construction Activity

The improvements in freight traffic in 1932 and 1933 lasted only four months. The improvement that began in August, 1935, lasted 22 months. There are some good reasons for believing the improvement which has now been occurring for almost six months will also continue for a long time. The principal of these reasons is that there is occurring a larger expansion than has heretofore occurred during the depression of the most important of all the durable goods industries—viz., construction. Total construction contracts (exclusive of public works and utilities) in the first one-half of 1937 were \$1,081,600,000 and in the first one-half of 1938 only \$832,851,000, a decline of 23 per cent. On the other hand, while in the four months July-October, inclusive, 1937, they were only \$691,500,000, they were \$783,000,000 in the corresponding months of 1938, an

increase of 13 per cent. And the increase is accelerating, an almost phenomenal advance having occurred in October. In that month in 1937 residential contracts were \$65,500,000 and non-residential contracts \$75,000,000, a total of \$140,500,000. In October, 1938, residential contracts were \$112,673,000 and non-residential contracts \$131,020,000, a total of \$244,000,000, or a gain of 74 per cent.

Contracts for residential construction usually decline in the second half of a year. Therefore, it is most encouraging that thus far in 1938 they have continued to increase and were actually larger in the four months ending with October than in either the entire last six months of last year or the first six months of this year. When business is good the construction industry is one of the largest sources of railway freight; and there is no other industry an expansion of which will increase railway freight business so rapidly.

Another favorable indication is the steady increase that has been occurring in the buying and production of steel. Previous improvements of business during this depression have been unbalanced and temporary because increases in the buying and production of consumers' goods have been unaccompanied by corresponding increases in the buying and production of durable goods. The larger the increase in the production of durable goods the more likely is an improvement in business to be lasting; and when both construction and steel production are increasing it is evident that business in the durable goods industries is improving.

Prospective Increase in Net Operating Income

Plainly, the immediate prospect is for a continuance of the increase in railway freight loadings, gross earnings and net operating income, in spite of the defeat of the effort to reduce wages. The important question however, is, how much, on the basis of present trends, the increase in net operating income may reasonably be expected to be. The volume of freight business in September, 1938, was about the same as in September, 1935, and in both months the trend of business was upward; but the amount of net operating income earned in September, 1938, was 12 per cent smaller than in September, 1935. It seems not unreasonable to assume that the present upward movement of freight business will continue during the rest of this year and 1939 at about the same rate at which the upward movement during the last quarter of 1935 and the year 1936 occurred, and that the result will be the earning in the year 1939 of a net operating income of approximately \$585,000,000—12 per cent less than in 1936, but as much as in 1937 and more than in 1931, 1932, 1933, 1934 or 1935. This rough estimate, with all its liability to error, indicates very plainly that much more will be needed to solve the railroad problem than even the largest increase of gross and net earnings that can now be rationally estimated, for a net operating income of \$585,000,000 in 1939, while a large increase over 1938,

would be only $2\frac{1}{4}$ per cent on investment, and would be 54 per cent less than was earned ten years before in 1929 and even 34 per cent less than was earned nine years before in 1930 when the depression had begun.

Proposed Measures for "Relief"

What, then, besides continuance of the present increase in traffic due to improvement in general business is to be relied upon for solution of the present acute railroad problem? The necessity for adoption of other measures has, of course, been intensified by abandonment of the wage movement. President Roosevelt has appointed a committee of three railway executives and three labor leaders to formulate a program of legislation which apparently he has virtually committed himself in advance to supporting. In other words, the substitute for a wage reduction is to be co-operation of President Roosevelt and the labor leaders with railway management in behalf of measures that will help afford the railroad industry relief.

There is no question as to the *possibility* of legislative and other measures that would be very helpful. The real question is as to the feasibility of securing their adoption. For example, the most important legislation needed is for the establishment of equality between the railways, on the one hand, and carriers by water and highway, on the other hand, as respects not only regulation, but also subsidization. It would have to include legislation by many of the states because, while waterways derive all their subsidies from the federal government, carriers by highway derive most of their subsidies from the state governments. Perhaps railway executives and labor leaders will have no great difficulty in agreeing on proposed legislation of this kind; but other carriers, and the customers of all carriers, will have much influence in determining whether it shall be passed. Any program to have a good chance in Congress will have to attract the support, or at least not arouse too much of the antagonism, of the shipping public; and it will not be too easy to formulate a

program that will be inviting to railway managements, railway labor leaders and railway customers.

The Only Solution—Increased Net Operating Income

This paper has meant what it has said about the probable results of success or failure of the railways in getting a wage reduction; and it is very apprehensive regarding the ultimate effect of the outcome of the wage controversy on private ownership. But the wage controversy, and the widespread publicity that it made it possible to give to the facts about the railway situation have had the beneficial effect of causing a large part of the public to realize that there is a very serious railroad problem, and that the maintenance of present high wages has necessitated early choice by the public and public men between (1) acceptance of government ownership and (2) adoption of every available fair and reasonable measure except reduction of wages that will be helpful to private ownership. We believe that, in the long run, government ownership and management would prove as bad for railway employees and their labor unions as it would for railway patrons, and that, therefore, managements, employees and patrons should join in supporting all the measures necessary to prevent it.

In order that anything constructive may be accomplished it cannot be recognized too clearly or emphasized too much that *there is no salvation for private ownership excepting through a large increase in the net operating income of the railway industry*. It has been the decline in net operating income that has threatened the entire industry with bankruptcy. It has been the decline in net operating income that has forced the railways to lay off hundreds of thousands of employees. It has been the decline in net operating income that has forced them repeatedly during the depression years to reduce their buying from the manufacturing industry to unprecedentedly low levels. And only a large increase in the industry's net operating income will enable it to rehabilitate itself, contribute toward national recovery and avoid government ownership.

How Employees Can Protect Their Jobs

"[Railroad employees meeting recently at Atlanta have] asked Congress not only to refuse to extend the federal barge services but to compel the government to divest itself of the facilities it now owns. . . .

"The Atlanta meeting addressed itself to the heart of the railroad difficulty, which is the continuing, unreasoning addition to transport facilities already in excess of the country's needs. It is that excess of facilities, the owners of which are of necessity obliged to compete murderously with one another, which mainly accounts for the present inability of rail carriers to continue to pay present wage scales and maintain their present volume of employment.

"The case would be quite different if all the competitors in the transportation field were equally required to shift for themselves financially—if each tub had to stand on its own bottom. But railroads, highway truckers and

—From the Wall Street Journal

water carriers vary widely in their status as to rate regulation, labor conditions, taxation and capital finance. The government's inland water lines are probably the most flagrant case of arbitrarily favored competitors in the whole field. Shippers able to use them are able to charge a good part of their freight bills to the United States Treasury.

"It would not, of course, solve the railroad problem if Congress should heed the call of the Atlanta meeting and take the government out of competition with the railroads. But it would be a beginning on a rational attempt to do what Congress can do to help toward its solution. For that reason the railroad unions would serve railroad labor as a whole by putting their considerable influence with Congress behind the Atlanta demand, without asking advance payment for such a service."



General View of the 135-Ft. Continuous-Type Turntable Installed at Parkwater, Wash.

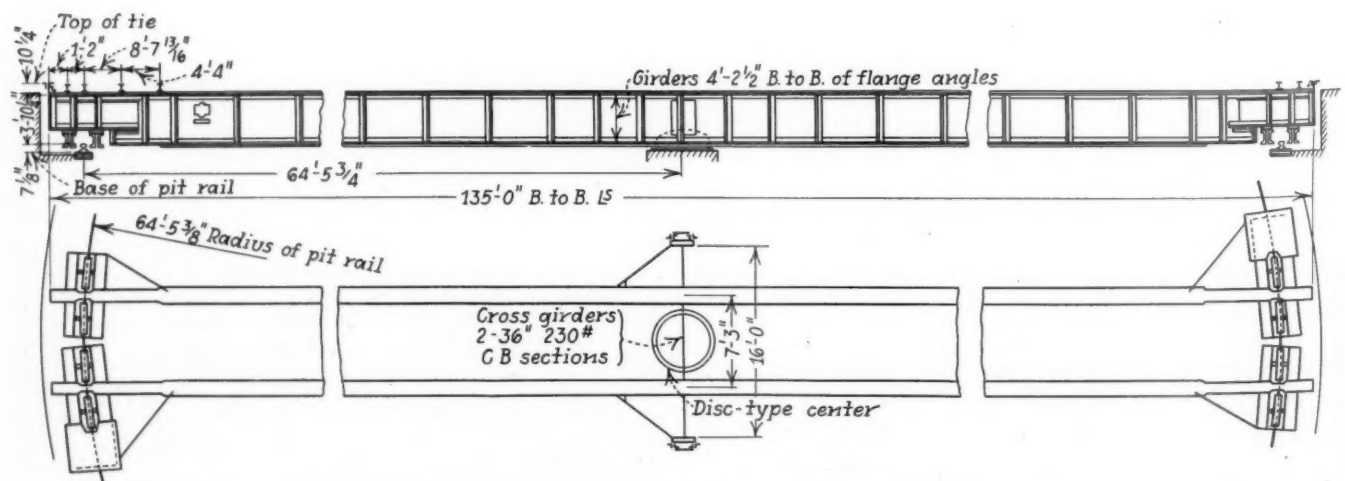
Northern Pacific Builds Turntables 135 Ft. Long

Three structures of the continuous type, installed in the last two years, are believed to be the longest ever constructed

IN 1936 the Northern Pacific placed some new locomotives in operation between Livingston, Mont., and Missoula, which were longer than any previously in use, and which necessitated the replacing of the existing turntables with longer ones. These locomotives, which are of theallet type, have a wheel base of 113 ft. 8 in. and an over-all length of 127 ft. 1 in. In rebuilding the turntables to serve these locomotives, it was decided to build them 135 ft. long to allow for still further increase

in locomotive lengths in the future, since the turntables which required extension or replacement had been in service only a few years.

The first turntable to be rebuilt was at Livingston, Mont. The table at this point, which was installed in 1923, was a 100-ft. turntable of the continuous deck girder type with a disc center and end trucks fitted with phosphor-bronze bearings. This table was remodeled in 1936 by installing a new pair of girders 135 ft. long,



Elevation of and Horizontal Section Through the New 135-Ft. Tables Installed by the Northern Pacific, Showing Girder Dimensions and Arrangement

Moving the New 135-Ft. Table Into Place at Pasco, Wash., Over a Cribbed-Up Track



which were designed to fit the old center, and to which the end trucks from the existing table were moved after being fitted with roller bearings. A year later it was decided to replace the 85-ft. turntables at Pasco, Wash., and Parkwater with new turntables 135 ft. long in order that the new locomotives might be operated in the territory between these two points.

Designed for 592-Ton Engines

These new turntables, which were designed for a 592-ton locomotive having a 2-8-8-4 wheel arrangement, are of the continuous type and have two girders of uniform section with the usual type cross bracing. The girders are of a uniform height of 4 ft. 2½ in., measured from back to back of flange angles and are supported at the center by cross girders consisting of two 36-in. 230-lb. C. B. sections. The turntable center under the cross girders is provided with a grade A bronze disc 25 in. in diameter and 1¾ in. thick, with grooves on the bottom which are supplied with oil by two pipes extending to the deck.

Under each end of the turntable are four rolled steel car wheels without flanges, 33 in. in diameter. The axles of these wheels are supported in roller bearings, and the bearings are connected by 2¼-in. bolts to two built-up beams which are fastened to the underside of the turntable girders. Each wheel is so mounted and adjusted by means of shims that its axle is radial to the center of the turntable. Tractive power, which is furnished by two 25-hp. electric motors mounted at diagonal corners

on each end of the turntable, is transmitted to one wheel at each end by means of two sets of reducing gears. The motors use 3 phase, 60 cycle, 220-volt alternating current, run at a speed of from 900 to 865 r. p. m. at full load, and are connected to their source of power by means of an overhead collector at the center of the turntable. An operator's cab also is provided at one end of the turntable.

Circle Rail Designed for 256-Ton Load

The circle rail, which is of 131-lb. section, rests on steel plates 1⅜ in. thick and 14 in. by 15 in. in area, which bear directly on a concrete pit wall of standard construction. Anchor bolts 1¼-in. thick, which are set in the concrete of the pit wall, extend through the bearing plates and hold the circle rail in place by means of specially designed, adjustable rail clips which are fastened to the anchor bolts. The pit wall which supports the circle rail is designed for a load of 256 tons on the circle rail.

The deck of the turntable is composed of bridge ties which rest directly upon the turntable girders and the rails on the turntable are of 100-lb. section. At each end of the deck three steel ties are inserted, and on the pit back wall short sections of 8-in. steel H beams are placed along the back wall for support of the approaching tracks at the edge of the pit. The H beams, which are of 37.7-lb. section, are bolted to the top of the back wall with bolts set in the concrete and are also bolted to

(Continued on page 702)

The Old 85-Ft. Turntable at Pasco Being Removed—Note Cribbing in Place Beneath



Why Retain Vestiges of the Past?*

A few pointed questions directed at archaic details of locomotive design which affect fuel economy

By F. P. Roesch

Vice-President, Standard Stoker Company

THE past few years has witnessed a decided change in operating conditions. Speed and more speed is now the watchword, and this means not only speed between terminals but reduced delays at such points. We can no longer tolerate the delays incidental to cutting the engine off, backing it down to the cinder pit to clean the fire, etc., where crews are changed. On the contrary, the fireman is expected to keep the fire in such condition that, when arriving at the change point no further attention is required. This calls for a 100 per cent job of firing, without fire cleaning, regardless of the length of engine run. It can be done when conditions are right.

Clinker Formation

In many quarters the impression still prevails that the formation of clinkers in a locomotive firebox is due altogether to the character of the coal or the manner in which it is fired, or both. That theory still holds good where locomotives are manually fired, but where mechanically fired under conditions suitable to mechanical firing, can be thrown into the discard.

The above statement may be challenged on the grounds that any coal producing an ash of a low temperature fusing point will also produce clinkers. We do not dispute that statement, but do maintain that more clinkers are caused through improper fire conditions, viz., uneven thickness, etc., than are directly due to fuel characteristics. Often these conditions are due to correctable factors over which the fireman has no control. It is our job to correct such conditions as far as we can. As we cannot change the characteristics of the fuel, and as the fireman is doing the best he can under the circumstances, we must attack the problem from the mechanical angle and recommend such construction changes as will tend to reduce, or if possible eliminate these bad fire conditions.

This points directly to a correctable construction that is one of the primary causes of clinkered fires where the coal is inclined to clinker, or to conditions equally responsible for fuel waste with what is termed "good" or non-clinkering coal. The results are practically the same from a combustion standpoint, regardless of whether the inflow of air through the fire is restricted by clinkers or a heavy bank, as we only get surface combustion at such points and the remainder of the grate area must carry the full load. This results in a higher than the economical rate per square foot of grate over the remaining or effective area, with the usual attendant fuel loss.

When trailer trucks with inside journals were first introduced, it was necessary to elevate the rear end of the mud or foundation ring in order to provide clearance for springs and spring rigging. This construction resulted in a grate having a pronounced downward slope from

the rear to the throat sheet. While this construction offered no serious impediment to good firing when locomotives were operated at medium speeds, it does materially affect fire conditions today, as the excessive oscillation of the locomotive at speed, results in the fire bed creeping forward—creating a heavy fire at the forward end of the firebox and a thin fire at the rear. This condition prevents the admission of sufficient air in front to support combustion, and admits too much at the rear, thereby in effect restricting the effective grate area proportionate to the amount covered by the heavy fire. The inside-journal trailer truck is largely a thing of the past, but the sloping grate is still with us. Why?

While on the subject of sloping grates, we may as well consider what are termed "hog trough" or "basket grates," some of which are still in service. These grates slope from the sides to the center, forming what might be termed a longitudinal trough or basket, with sides higher than the center.

When we were first taught the art of firing we were instructed to fire along the sides and also keep the corners, particularly the back corners, full, i.e., keep the fire heavier along the sides and in the back corners, to avoid the inrush of cold air at these points. Obviously, with the hog-trough type of grate this is quite a task and usually results in a gradual increase in fire-bed thickness through the center, creating a condition not conducive to good combustion. Therefore, we believe we can consistently recommend the leveling up of such grates where they occur, especially where locomotives are mechanically fired. The improved overall combustion, with the attendant reduction in fuel consumption, will more than offset the expense of the change.

Firing Coal Backwards

The majority of locomotive mechanical stokers fire through the door opening or through holes piercing the boilerhead at about the level of the firedoor opening. In order to obtain proper distribution, it is necessary to extend the distributing plate from six to eight inches beyond the door sheet. Where the slope of the back boilerhead is excessive, it is necessary to propel enough coal backward to cover an area equal to the distance from a vertical line from the end of the distributing plate to the door sheet at the grate level, multiplied by the width of the firebox. This area may be from four to six square feet. As projecting coal backward mechanically presents certain difficulties, the area mentioned above is frequently covered by "dead grates," thus reducing the effective grate area by that amount. Why an excessive backhead slope?

The demand on a locomotive boiler is not constant, but varies from full load to no load. Therefore, we cannot set up a definite ratio as between steam requirements

* Abstract of a paper read before the second annual meeting of the Fuel and Traveling Engineers Association at Chicago, September 27, 1938.

and grate area. The best we can do is to arrive at some compromise that will result in a fairly low rate per hour at light or no load, but not an excessively high rate at maximum demands, as either results in fuel waste. The result of such compromise may be a combustion rate varying from say 30 lb. at low demands to 150 lb. or more per sq. ft. of grate per hour at maximum requirements.

The Basic Principle of Combustion

Haslam and Russell, in "Fuels and Their Combustion," 1926, state that where the fire is loose and of a depth so that air can pass through it freely, all the oxygen in the air admitted has combined with the carbon in the fuel in the ratio of one atom of carbon and two of oxygen, producing CO_2 , and that this combination is completed at from 4 to $4\frac{1}{2}$ in. above the bottom of the fuel bed, except with lignite, where it is completed at from 2 to $2\frac{1}{2}$ in.; the measurement in each instance beginning at the top of the ash bed. In other words, where the depth of the fuel bed or burning zone is greater with either coal than that given, or is so packed that air cannot pass through it freely, there will not be enough free oxygen present above that zone to combine in proportions of one and two with the carbon gases distilled above that point, and unless supplementary or top air is admitted, will pass off as CO.

Quoting directly: "That portion of the fuel bed above the oxidation zone is a reducing zone where the CO_2 formed in the oxidation zone is partially reduced by the coke to CO. The thicker the fuel bed the more CO is formed. Since the object sought in the combustion of coal on a grate is to burn it with oxygen from the air, any reduction from CO_2 to CO is a step backwards. Consequently, the fuel bed should be no thicker than is necessary to prevent blow holes. Blow holes are caused by the unevenness in the distribution of coal on the grate or anything, such as clinkers, that produces uneven resistance to the passage of primary air up through the fuel bed."

As the heat value of CO_2 measured in B.t.u. is 14,500, while that of CO is but 4,500, it requires no slide rule to approximate the fuel or heat loss due to imperfect fire conditions.

Consider now the effect of dead grates, with which we can also include dump grates. Haslam and Russell's experiments indicate that the fire bed must be kept relatively loose in order to obtain good combustion. Obviously this cannot be done on a dead or dump grate. We therefore have on the area taken up by such grates a condition practically the same as the one previously mentioned. And yet there are in service today locomotives where from 20 to 35 per cent of the total grate area is taken up by dead and dump grates.

The reason given for this condition is that the coal fired is inclined to clinker, therefore the need for many and large dump grates to facilitate fire cleaning. The fact is entirely overlooked that dead and dump grates are conducive to clinker formation, from which we could logically conclude, less dump grates, less clinkers, and with less clinkers, less dump grates and less time for fire cleaning. Cannot this association take the position that the number and size of dead and dump grates can and should be reduced or entirely eliminated under present conditions?

The Grate and Fuel Losses—Both Ash-Pan and Stack

Where locomotives are mechanically fired, all oversize lumps are mechanically reduced to proper firing size be-

fore being introduced into the firebox. In this reduction, naturally more fines are created than originally contained in the coal. To guard against loss, both stack and ashpan, it became necessary to adapt the grates and draft to the size of the coal as fired, and where this was done logically, it was immediately observed that the results justified the cost.

The introduction of mechanical firing has done more to promote fuel economy than any one other appliance except the superheater, as it compelled the use of a logical grate. It is unnecessary to dwell on the grate of the past, viz., the finger type, except to say that this type of grate had perhaps a greater influence on fuel loss—at both ashpan and stack—than any other part of the locomotive, an influence that was not realized until the introduction of mechanical firing. To that design of grate can be charged directly the cinder loss, always until recently attributed to the size of the coal as fired. As all stokers must reduce oversize lumps of coal to sizes suitable for mechanical or steam-jet distribution, and as in this reduction some small sizes are necessarily produced, the stoker manufacturers in self-defense had to prevail on the users of mechanical stokers to resort to a grate suitable to the coal as fired, and when this was done another old theory, viz., that stack loss is proportionate to the size of the coal fired, was exploded and can also be thrown into the discard.

Perhaps the credit for fuel reduction should be evenly divided between the stoker and the modern restricted grate. At any rate, the first compelled the adoption of the second, and the second saved the reputation of the first. However, regardless of which should have the credit, we can consistently recommend the adoption of the restricted grate and consign the finger type to the limbo of avoidable factors in locomotive design affecting fuel consumption.

The Brick Arch Controversy

While engaged in exploding old theories, we must not overlook the setting of the brick arch. The lower end of this arch was usually set about $5\frac{1}{2}$ in. from the throat sheet, on the theory that such setting prevented the stoppage of the lower tubes with cinders. But when tests proved that the draft immediately under such opening was more than twice as high as over any other part of the grate area, and as a result of this high draft the finer particles of coal suspended in the draft current were whipped through this opening, through the lower tubes and so on out of the stack, that theory also went haywire. The arch was sealed against the sheet, so that now any fine particles of coal suspended in the draft, strike the arch, fall back on the fire bed and are consumed, instead of being discharged from the stack and lost. So the setting of the brick arch can also be listed among avoidable factors.

Firebox Volume

Locomotive designers are beginning to give more thought toward decreasing the length of the boiler tubes and increasing the length of the combustion chamber—a step in the right direction. Dr. W. M. F. Goss upset the old theory of the relative value of firebox and tube heating surface at the Coatesville tests, but the lesson to be drawn from that test was not fully appreciated in all quarters. However, time marches on and leaves old theories behind. Aside from the difference in value of heating surface, it has been found that a better diffusion of draft over the grate area can be obtained where a combustion chamber is employed than without one. Not

only that, but a more complete combustion of the gases is possible, and further, a possible reduction in cylinder back pressure due to less draft restriction and resultant lower front end vacuums required. So let us include long tubes and short or no combustion chambers among our avoidable factors.

Unrestricted Exhaust Passages

Many attempts have been made to reduce cylinder back-pressure, but so far without entirely satisfactory results, due primarily to failure to recognize fully the fact that the boiler output is dependent on the coal rate, and that this in turn is governed by the draft, and that with present nozzles of a fixed dimension we automatically obtain a firebox draft proportionate to the steam demand.

True, in starting or at low speed and long cut-off, the draft is excessive and indicates a possible advantage in a variable nozzle, but this, when weighed against the disadvantage and the fact that in many cases the nozzle is not the dominating factor in the production of back pressure, prompts the consideration of other factors involved, such as restricted exhaust passages, etc.

Present cylinder design includes the valve chambers, cylinders and saddle in one integral casting. If now, instead of leading the exhausts from each cylinder through tortuous and sometimes restricted passages to the exhaust stand, all such passages were eliminated and the exhausts were conducted direct to the saddle chamber, we should gain a possible reduction in back pressure through reduced friction in exhaust passages, but also a reduced exhaust pressure and draft at low speeds and long cut-off through the expansion of the steam into an increased volume before its final discharge.

Such an arrangement holds further attractive possibilities, in that such a chamber would serve as a very effective by-pass, particularly if the exhaust from auxiliaries were also piped into this chamber, in which event the oil-saturated steam from these auxiliaries would serve as an effective lubricant for the valves and pistons while drifting, and so eliminate the use of a drifting valve or drifting throttle taking live steam directly from the boiler. The amount of steam used for drifting purposes has not been measured recently, but in tests conducted some years ago it was found necessary to employ a two-inch pipe from the boiler to the saddle in order to sufficiently dilute the gases drawn from the front end through the exhaust nozzle to prevent the carbonization of the oil and its deposit in the exhaust passages and on the pistons and valves.

The Future High-Speed Locomotive

While the locomotive of today has incorporated one or more of the features mentioned, the high-speed locomotive of tomorrow will have all of them, viz., a softer exhaust, a level, restricted grate, a sealed extended arch, and increased combustion volume compared to grate area. It will burn semi-pulverized coal, fired mechanically without fear of cinder loss and with much greater efficiency than under present methods, which means greater heat transfer and higher superheat. In other words, engineers will devote more study toward increasing combustion efficiency and in so doing, increase overall efficiency, as the one goes hand in hand with the other.

The locomotive will retain its present general outward appearance, and while the streamline effect will no doubt be retained for its advertising value, the boiler and particularly the firebox end and related parts, will witness

the most detailed changes. Improvement in the generation of steam is a fertile field and one wherein we find the greatest promise at the least expense.

Northern Pacific Builds Turntables 135 Ft. Long

(Continued from page 699)

the approach rails, all of which are of 85-lb. section adjoining the turntable. The approach rails, are so anchored that they expand away from the table.

Extensive Preparations

In the installation of the new turntables at Pasco and Parkwater, the operation is described as it was carried out at Pasco, and is more or less typical of the other installation. One of the preliminary steps was to excavate and place on falsework nearly all of the approaching tracks between the old and new pit walls, this being done while the new pit wall was being constructed. The new pit wall was completed, including the installation of the circle rail, but the old pit wall was not disturbed until the turntables were being changed. The new turntable was completely assembled on two flat cars, including ties, rails, overhead collector frame, end trucks, cab, wiring, etc. A pre-cast reinforced concrete block for the top of the center pier was also ready.

Installation

Three wrecking cranes were used in changing the turntables, two being located at one end and one at the other. The two cranes at one end were placed on each side of a middle or working track so as to leave it clear between them. The first step was to lift the old 85-ft. turntable. A track on cribbing was then laid across the pit under the old table, connecting with the working track, and flat cars were shoved in over the old pit. The old turntable was then lowered on the flat cars and taken away. During this time, men had been busy demolishing the old pit wall and removing falsework from under the approach tracks.

As soon as the old turntable was out of the way, the top of the old concrete pier in the center was cut down to the proper elevation, and the precast concrete block was placed on top of the center pier with a locomotive crane. The flat cars supporting the new turntable were then pushed out over the pit on the track on the cribbing and the new turntable was lifted clear of the cars, which were then withdrawn. The temporary track and cribbing across the pit were then removed, and the pit was cleared of falsework, timbers, and the remains of the old pit wall. The new turntable was then lowered into position.

After the turntable was placed in operation, it was found that in some cases the new locomotives would force the table out of line with the approach track when being moved on or off the turntable. The alinement of the approach tracks was found to be at fault and they were relined to provide a minimum of 58 ft. of tangent track adjacent to the pit wall.

The motors used for these turntables were a product of the Westinghouse Electric & Manufacturing Company and the roller bearings used for the end trucks were Hyatt bearings. The assembly and installation were completed by the Northern Pacific bridge and building forces under the general direction of B. Blum, chief engineer, and of the late M. F. Clements, engineer of bridges.

The Miniature-Lever Machine at Columbia Controls the Interlocking at That Point and Also Five Remote-Control Layouts



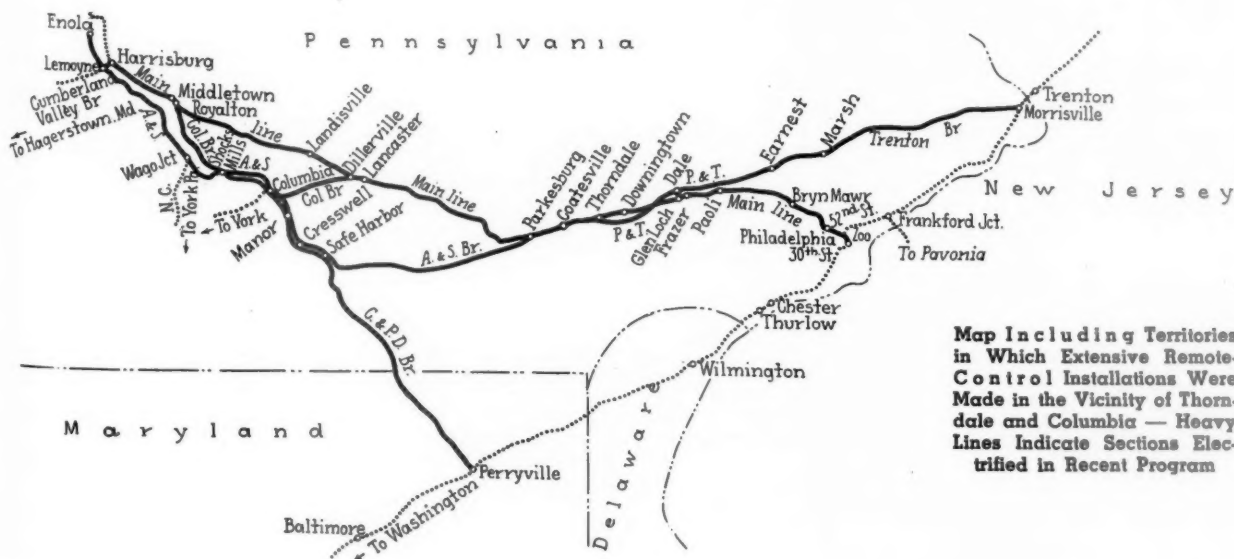
Remote Control Interlockings on the Pennsylvania

Miniature-lever machines used on extended territories to conform with track changes in electrified territory

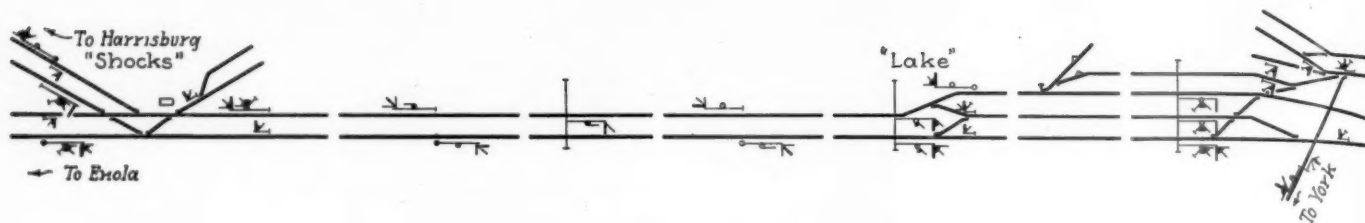
AS a part of the project for the electrification of the Pennsylvania's lines between Paoli, Pa., and Harrisburg, which was completed early in 1938, numerous track changes were made which necessitated the removal of certain interlockings and the revision of other plants, the most important of these changes resulting in the installation of two extensive remote control consolidations, one at Columbia, Pa., and the other at Thorndale. In brief, the lines electrified included the main line between Paoli, Pa., and Harrisburg, and freight lines between Morrisville, Pa., and Thorndale,

Pa.; between Parkesburg, Pa., and Enola; between Creswell, Pa., and Perryville, Md.; between Lancaster, Pa., and Royalton, via Columbia; and between Monmouth Junction, N. J., and South Amboy, via Jamesburg.

When surveying the lines to be electrified, consideration was given to changing certain track arrangements at outlying points to facilitate train movements. On the main line between Coatesville, Pa., and Dale, and on the A. & S. branch between Shocks Mills and Creswell, certain hand-operated switches, together with new cross-overs and turnouts, were converted to power operation,



Map Including Territories in Which Extensive Remote-Control Installations Were Made in the Vicinity of Thorndale and Columbia — Heavy Lines Indicate Sections Electrified in Recent Program



Track and Signal Plan of Remote-Control Layouts Between

to speed up operation and obtain maximum benefit with electric traction. Furthermore, to reduce delays, as well as to avoid intercommunicating between numerous interlocking towers, the controls for these switches and governing signals, as well as the controls for all other interlocked switches and signals within the areas specified, and in a number of cases trolley sectionalizing switches, were combined into and operated by central machines of the miniature-lever type. One machine, located at Thorndale, controls all functions between Coatesville and Dale, and another at Columbia controls all functions between Shocks and Creswell, the old interlocking stations within these territories being abandoned.

The Columbia Consolidation

Leaving Harrisburg, the freight tracks parallel the main-line passenger tracks for approximately eight miles. At Royaltown, these freight tracks connect with the Columbia Branch tracks, which diverge southeastwardly along the east bank of the Susquehanna river to Shocks Mills. At this point, the A. & S. branch, after following the west bank of the Susquehanna from Enola yard, crosses to the east side, from which point, previous to electrification, the two A. & S. tracks and the two Columbia Branch tracks ran parallel to Columbia. At Columbia, two Columbia Branch tracks diverge northeastwardly to Dillerville, while the A. & S. tracks continue along the east side of the Susquehanna to Creswell and then diverge through Shenks Ferry to Parkesburg. The Columbia and Port Deposit branch, joining the A. & S. tracks at Creswell, follows the east bank of the Susquehanna to Perryville.

Previous to the electrification, in the territory between Shocks Mills and Creswell, there was one 20-lever mechanical interlocking at Columbia, including several hand-operated crossovers and turnouts, and 7 electric levers controlling certain signals in Columbia; this machine also remotely operated a siding switch to the main track, with necessary governing signals, at a point now called Lake, about 6,000 ft. west of Columbia.

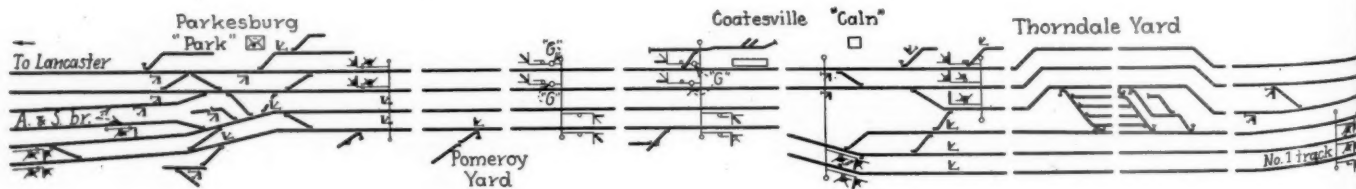
With the introduction of electric traction, which provides more rapid train movements, the electrification of

all four tracks between Shocks and Columbia was not necessary. To avoid duplication of electric traction on the parallel lines, the Columbia Branch tracks at Shocks were shifted sufficiently to form a junction with the A. & S. tracks, and by adding two crossovers provision was made for train movements in all directions. One track of the Columbia Branch was abandoned between Shocks and Columbia, while the remaining track, not electrified, was retained as a siding to serve numerous industries.

The former remote-controlled installation at Lake was amplified by adding two crossovers. These changes in track arrangement provide facilities for moving all Columbia Branch trains over the A. & S. tracks between Shocks and Columbia; in order to permit eastward movements of Columbia Branch trains from Shocks to Columbia while the normally eastward track is occupied, the westward track is signaled and operated for traffic in both directions, cab signals being in service for eastward movements as well as for normally westward traffic.

The A. & S. branch and the C. & P. D. branch tracks were relocated for about 7,000 ft. eastward from Columbia to provide a three-track railroad to Manor interlocking plant, where an interlocking, consisting of one turnout and one crossover with necessary governing signals, was installed. Just west of Creswell, at a point known as Port, the single track of the C. & P. D. passes under the two A. & S. branch tracks and then joins the westward A. & S. branch track. The C. & P. D. branch trains are operated over the A. & S. branch from Creswell to Manor. A new track was built at Port connecting the eastward A. & S. branch track with the single-track C. & P. D. branch. The single track between Creswell and McCall on the C. & P. D. branch, is signaled for automatic block operation in both directions, including cab signals eastward and westward, occupancy of this section being controlled by traffic locking, with the control points located at Columbia and Midway.

To facilitate train movements with as little delay as possible and to permit traffic to be directed from a central location, the five remote plants, Shocks, Lake, Manor, Port and Creswell, together with the local



Track and Signal Plan of Remote-Control Layouts Between



Shocks and Creswell, Controlled from Columbia

layout at Columbia, were combined into and controlled from one machine located in a new tower at Columbia. Interlocked switches and signals in the vicinity of the control machine are operated by the direct-wire scheme, but the interlocked switches, governing signals, trolley sectionalizing switches, and other functions at all the remote plants are controlled by the two-wire, time-code scheme. All interlocked switches are operated by elec-

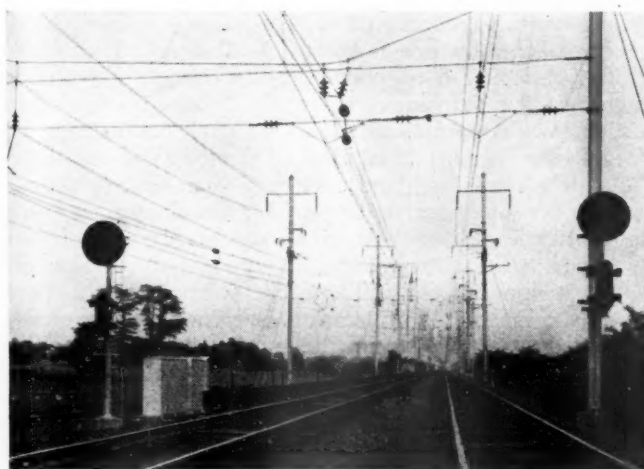
relay in turn controls the wayside and cab signals. The train is brought to a stop in the regular way but must not proceed without examination for broken parts, or permission of proper authority.

The Thorndale Consolidation

Prior to the electrification, there were located between Coatesville and a point about 3 miles west of Paoli, on the main line from Philadelphia to Harrisburg, a 24-lever mechanical interlocking at Coatesville, a 23-lever electro-pneumatic interlocking at Thorndale, an 11-lever interlocking at Caln (the machine being located in Thorndale tower), a 23-lever electro-pneumatic interlocking at Downingtown, two hand-operated turnouts and one hand-operated crossover at what is now Glen, and a hand-operated crossover and two hand-operated turnouts at what is now Dale. Glen is the junction of the Trenton branch with the main line, and Dale is the junction of the Philadelphia and Thorndale branch with the Trenton branch. The Philadelphia and Thorndale branch joins the main line at Thorndale. Between Caln and Thorndale interlockings, the Thorndale coaling station and yard with many tracks served the necessities of steam operation.

The advent of electrification required several major track changes in this territory. The tracks in Thorndale yard were completely rearranged, providing two yard running tracks for through freight service, and east and west ladder tracks for pick-up and set-off service. The through freight electric service, as well as additional shifting at both ends of the yard, made necessary certain track changes in Thorndale interlocking, and a major rearrangement of switches at Caln. The old standard four-track interlocking at Downingtown was located on a curve, and as the new arrangement of switches at Thorndale and Caln permitted crossover movements that were formerly made at Downingtown and Coatesville, the entire interlocking at Coatesville was abandoned. By installing three new crossovers on tangent track just east of Downingtown, the old interlocking plant at Downingtown was also abandoned.

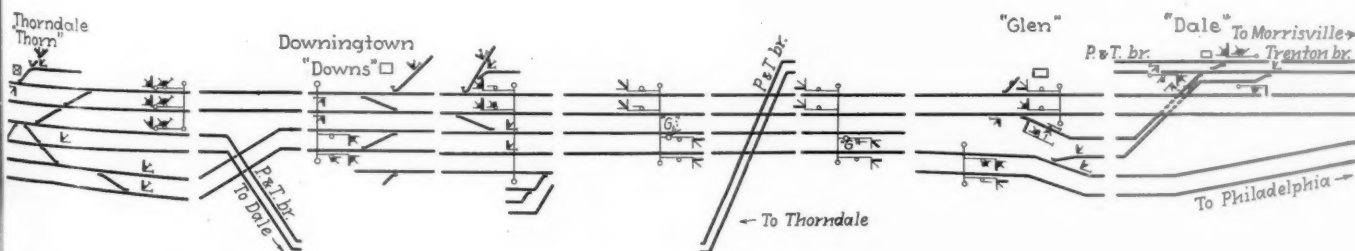
To obtain full benefit from electric operation, the former hand-operated switches at Glen and Dale, in-



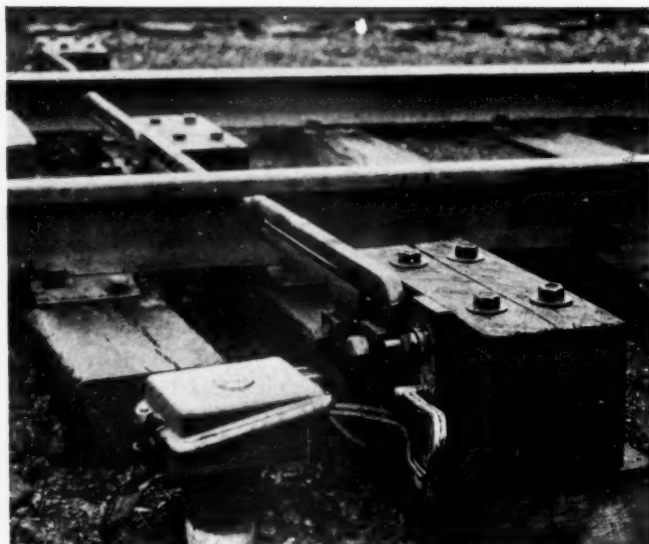
Position-Light Signals Were Used Throughout. View Shows Eastward Home Signals at Shocks

tro-pneumatic switch-operating mechanisms, except the turnout at Creswell, which is a dual-control electric switch-operating mechanism.

All main-track switches are equipped with latch-out type point-detectors. The automatic block signals and interlocking home signals throughout these territories are of the position-light type. Generally, throughout the electrified territory, dragging equipment detectors were installed in approach to interlockings. As shown in the illustration, a cast-iron member is supported near each rail, with a circuit run through these members in series. When anything dragging on a train strikes a member, it is broken, thus opening the circuit to a relay; this



Parkesburg and Dale, Controlled from Thorndale



Dragging-Equipment Detectors Installed as Part of the Project

cluding a slight rearrangement of tracks at Dale, were interlocked, and, to improve the efficiency of train movements, reduce delays to a minimum, and cut down maintenance and operating costs, the control of interlocked switches, signals, trolley-sectionalizing switches, electric switch locks, and all other interlocked functions at Coatesville, Caln, Thorn, Downs, Glen and Dale are combined into and operated from one central machine, located in a new tower at Thorndale.

The control machine is of the miniature-lever type similar to the machine at Columbia; all interlocked switches, signals and other functions in the vicinity of Thorndale are controlled by the direct-wire scheme, while all functions at Coatesville, Caln, Downs, Glen and Dale are controlled by the two-wire time-code system, which is similar to the control of the remote plants in the Columbia area.

In order that reverse movements may be made on No. 1 track between Caln and the first eastward signal west of Coatesville without train orders, this signal is operated as a holding signal, so that eastward trains may continue to this point instead of being held several miles west at Park, while movements are being made at Coatesville industrial sidings.

The central control machine, towers, switch-operating mechanisms, signals and details of construction throughout the Thorndale consolidation are practically identical with those in the installation in the Columbia area. The following data and explanation will, therefore, apply generally to both the Columbia and Thorndale installations.

The Control Machine

The control machine is of the miniature-lever type, similar in construction and detail of working parts to machines included in centralized traffic control systems, relays serving to check the numerous routes in lieu of the older scheme of mechanical locking. The machine is constructed in three sections, a middle section 5 ft. long, with a 30-in. section attached at each end, placed at an angle for better observation and manipulation, and an operator's table built as part of the machine extending its entire length.

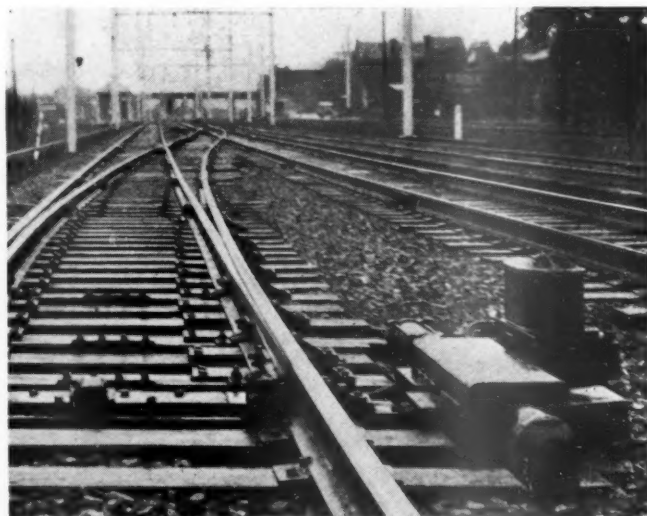
A track diagram, located immediately above the operating levers and extending across the length of the machine, includes all interlocked switches, signals, trolley-sectionalizing switches, indication lights for track cir-

cuits and traffic direction, and lights indicating trolley de-energization, all operating functions being numbered for ready reference. Indication lights functioning in conjunction with switches and signals are located on a panel as usual, immediately above the controlling lever involved. Lights are provided on the front plate for all remote-controlled plants, indicating low air pressure and power-off; also, push buttons are provided for operating an emergency whistle at each remote plant.

The Columbia machine includes 29 levers for switches and electric switch locks, 27 levers for signals, 2 levers for traffic, 2 levers for trolley-sectionalizing, 5 low-air-pressure indication lights, 6 power-off indication lamps, 6 push buttons for emergency horns, 29 toggle switches for trolley de-energized indication lights on the track diagram, and 2 ammeters for registering the current discharge. The Thorndale machine includes 28 levers for switches and electric switch locks, 24 levers for signals, 13 levers for trolley-sectionalizing, 1 lever for dragging equipment detector, 5 low-pressure indication lights, 5 power-off indication lamps, 5 push buttons for emergency horns, 45 toggle switches for trolley de-energized indication lights on the track diagram, and 2 ammeters for registering the current discharge.

A particular feature at both Columbia and Thorndale is the location of a telephone 10-line concentration unit and a 20-key patching unit in the front panel of the machine, with the face of the unit flush with the face of the machine panel, immediately in front of the operator.

The machines, with the necessary batteries, rectifiers, transformers, and instrument racks, are housed in two-story brick buildings located on the south side of the A. & S. tracks at Columbia, and on the north side of the main-line tracks at Thorndale. The second floor provides space for the operating machine, telephone test panels, and trolley-sectionalizing panel board. The



The Switches Are Operated by Electro-Pneumatic Machines

ground floor is utilized for all signal and telephone instruments, the relays, transformers, rectifiers, coders, batteries and numerous other instruments being supported in instrument racks constructed of pressed steel end pieces, shelves and angle frame. At the remote control points, concrete houses are installed for housing the numerous instruments of each central instrument location.

Pennsylvania forces prepared the plans and handled the field construction of these installations, the Union Switch & Signal Company furnishing the major items of signal and interlocking equipment.

Suggests Subsidy to Railroads*

Revolving fund of \$500,000,000 would cover cost of cars and locomotives that would be leased

By Harry A. Wheeler

President, Railway Business Association

MY belief is that it is now too late to put our whole dependence in any far-reaching or long-range railroad program. All who have made thoughtful proposals recognize that there are emergency as well as long-time necessities in the case, and that the former are becoming more pressing as the months pass, with railroad net income increasingly failing to cover fixed charges and in some cases failing even to meet operating expenses and taxes. Even if the long-time proposals could be promptly enacted into law, the time that must elapse before their provisions would improve the railroad net income would be too great to save certain roads from default in fixed charges and certain other roads from inability to meet operating expenses and taxes except through inroads into the depreciation account or through receivers' certificates, the open market for which is very narrow, unless the government purchases these certificates, or, as an alternative, adopts the policy of taking over the operation of the properties to escape possible abandonment of service.

Now, subsidy is a terribly unpopular term. It seems to be interpreted as a hand-out for which nothing tangible is returned, but it need not be actually so. The public may call a subsidy what is really only a price paid for an option or call upon a properly maintained property of proved national value or necessity. Let us admit that all property is subject to the use of the state when required to serve national security, but if that property, being imperatively interwoven with such security, is not or cannot without aid be maintained by its private owners for its highest emergency uses, then the alternative is to contribute to its maintenance or risk the effect of its obsolescence upon national security.

It is difficult for me to understand why in considering the national defense the condition of the railroads enters so little into public or political thinking, and especially at a time when so much is being said of the necessity to appropriate large sums for naval construction, for subsidy to American merchant marine as a naval auxiliary, for army war emergency preparedness, and even to offset the possibility of an electric power shortage. Any plan for national defense which does not include the most far-reaching preparedness of the railroads is inconceivably weak.

Condition and Inventory of Properties Not Adequate for Defense

Today, after only partial maintenance since 1930, the physical facilities of the railroads are inadequate to meet the emergency demands of the national defense and this fact presents a problem that invites immediate planning and very prompt action. I do, therefore, urgently invite your consideration of the following record:

Average Annual Maintenance, Roadway and Structures, 1925-1930, inc.	\$825,095,926
Average Annual Maintenance of Equipment, 1925-1930, inc.	1,191,866,258
Annual Total	\$2,016,962,184

Average Annual Maintenance, Roadway and Structures, 1931-1936, inc.	\$403,025,862
Average Annual Maintenance of Equipment, 1931-1936, inc.	689,565,922
Annual Total	\$1,092,591,784

For six years, therefore, the average yearly expenditure for maintenance of roadway and structures has been less than half that of 1925-1930.

The outlay for maintaining equipment has been less than 55 per cent of that for the 1925-1930 period. This in itself presents a serious situation, but when there is added the record of available equipment, it intensifies the need for immediate consideration.

Motive Power Equipment:	
Total Locomotive Inventory, 1926	62,776
Less 16 Per Cent Unserviceable	10,044

Total Serviceable Locomotives, 1926 52,732

Stated in terms of tractive power, the 52,732 serviceable units possessed a tractive power of 2,208,732,552 lbs.

Total Locomotive Inventory, 1936	45,146
Less 30 Per Cent Unserviceable	13,543

Total Serviceable Locomotives, 1936 31,603

The tractive power for all serviceable locomotives in 1936 was 1,547,662,116 lbs.

Locomotive Inventory Too Low

The total locomotive inventory of 1936 was 27 per cent less than in 1926.

The serviceable locomotive inventory of 1936 was 40 per cent less than in 1926.

The gross tractive power of 1936 was 18 per cent less than in 1926.

The serviceable tractive power of 1936 was 30 per cent less than in 1926.

Freight Car Equipment:	
Total inventory for 1926 was	2,348,679
Unserviceable cars—6 per cent	140,910

Usable cars, 1926	2,207,769
These cars had an average capacity of 45 tons, therefore the total capacity of these usable cars in 1926 was	99,349,603*

* From an address before the Chicago Association of Commerce at Chicago on November 2.

Total inventory for 1936 was	1,758,192
Unserviceable cars—12 per cent	210,983
<hr/>	
Usable cars, 1936	1,547,209
These cars had an average capacity of 48 tons, therefore the total capacity of these usable cars in 1936 was	74,266,032*

* Tons.

The total car inventory in 1936 was 25 per cent less than in 1926.

The total usable car inventory in 1936 was 30 per cent less than in 1926.

The total capacity in 1936 was 25 per cent less than in 1926.

But there is another phase of this matter that must also be considered, namely, the production capacity of the plants that build motive power, car equipment, railroad specialties and appliances used on the right of way.

Roughly, in the matter of car building, it is doubtful if more than 200,000 units could be delivered to the roads within the next year, and since the usable car inventory is now nearly 700,000 units under the inventory of 1926, the task of the car builders would involve a considerable period of time to build the inventory back to the 1926 level. In the matter of motive power building, the situation is even less satisfactory, for the assumed annual capacity of the plants engaged in this production is about 2,000 units and even this would probably require substantial expenditures for new tooling and more skilled labor than seems now immediately available. Since the serviceable locomotive inventory is 20,000 less than in 1926, even though the tractive power per unit has increased somewhat, it must be apparent that in this field there is a rather distinct limitation to production capacity.

The inventory of motive power and car equipment is insufficient to carry a restored normal industrial production of the country without using any part of it for the national defense. Additions to the operating equipment, sufficient for both purposes, would require more time than would be available to meet the emergency. Maintenance of way and structures has been neglected because of lack of earnings except main line track where safety of rapid movement demanded expenditures.

Why Not Subsidize the Railroads?

We are subsidizing other transportation agencies. Why, frankly, not the railroads? If at this time the national security should be safeguarded along the lines recommended by the President, and having public approval, how inconsistent it would appear to permit further lag of maintenance in the railroad structure, which admittedly must carry the major transport load in the national defense and that at the same time that the growth of industrial activity for the same defense and for general purposes will create a joint demand greater than could possibly be met with present facilities.

This danger to the national security should, it would seem, be made a foremost part of the whole preparedness program, and federal authority should not expect private ownership in a time when the return upon the investment is negligible, to maintain a defense mechanism at its own sole cost.

And what is the proposal? It could be only a bare suggestion, but having brought the matter to your attention you are properly entitled to that. There is no debit against the railroads in any government subsidy account, but the railroads may reasonably be said to have a credit through having maintained at their own

expense a national defense mechanism of imperative necessity to the government for more than half a century.

An appropriation could logically be made for a test period of five consecutive years beginning with 1939 of an amount sufficient to pay one quarter of the cost of maintenance of railroad way and structure, this amount to be paid to the railroads in reimbursement of the stated proportion of certified expenditures made by each operating road during each of the stated years. There should also be provided a revolving fund of five hundred million dollars, preferably administered by the railroads for one hundred per cent of the cost of construction of cars and locomotives which they will now add to their equipment inventory, the title to the equipment to remain in the government as holder of all of the equipment trust notes to be issued therefor, the equipment to be leased to the purchasing roads upon annual rentals that would retire the obligation, with reasonable interest, in fifteen years from the date of the lease. The adoption of some such proposals will contribute definitely to railroad credit and to the defense program. They require no complex machinery not already in existence and the cost of these proposals to the people will be but a fraction of the cost that would otherwise have to be assumed under ownership and operation of the properties.

Drastic Revamping Plan for Milwaukee

WASHINGTON, D. C.

THE common stockholders of the Chicago, Milwaukee, St. Paul & Pacific would have no share in the securities of the reorganized company if the Interstate Commerce Commission approves a proposed plan for that road's revamping which was submitted to it by Examiner M. S. Jameson. Besides finding that the equity of the common stockholders has no value, the examiner also recommends that the capital structure of the Milwaukee be scaled down from \$857,634,977 to \$631,010,668, the fixed-interest debt reduced from \$620,921,677 to \$105,895,179, and fixed interest charges cut from \$23,606,095 to \$3,864,602. The proposed plan provides for a contingent-interest debt of \$124,918,119 on which the annual charges would be \$5,621,315. Treating the holders of preferred stock slightly better, Examiner Jameson would permit them to receive warrants entitling them to purchase a specified amount of new common stock.

Examiner Jameson's proposed plan is premised on the same general philosophy of other recently submitted proposed reports on the Chicago & Eastern Illinois, Western Pacific, Denver & Rio Grande Western, and Chicago, Indianapolis & Louisville, namely, that in order to provide for a "depression-proof" capital structure, the common stockholders should be allowed no participation in the plan if it can be shown that their holdings no longer represent real equity. The commission is under no compulsion to accept this plan, but the action taken in the Western Pacific, Chicago Great Western, Akron, Canton & Youngstown, and Spokane International cases would indicate that, except for a few minor changes, it will accept the findings of the examiner.

Comparison of Funded Debt

The following table shows a comparison between the present funded debt and capital stock of the system, as

of December 31, 1938, and that proposed by Examiner Jameson, subject to a final determination of exact amounts:

	Present	Proposed
Fixed interest debt	\$620,921,677	\$105,895,179
Contingent interest debt		124,918,119
Preferred stock	119,307,300	108,675,970
Common stock, taken at \$100 a share ...	117,406,000	291,521,400
Total	\$857,634,977	\$631,010,668

¹ Includes \$118,775,714 of unpaid interest; is subject to adjustment for changes in amount of equipment obligations, short-term loans, etc., outstanding.

In the following table the examiner compares the annual charges applicable to the present capital structure with those under the recommended plan:

	Present	Proposed
Fixed interest	\$23,606,095	\$3,864,602
Adds-betts. fund		5,000,000
Contingent interest		5,621,315
Sinking fund	1,139,000	624,590
Dividends on pref. stock	5,965,365	5,433,798
Dividends on com. stock at \$3.50 a share	4,109,210	10,203,249
Total	\$34,819,670	\$30,747,554

² On principal only.

³ One-half discretionary.

Under the proposed plan equipment trust obligations totaling \$28,760,711 would remain undisturbed. All interest due on the indebtedness to the Reconstruction Finance Corporation would be paid in cash up to the effective date of the plan (January 1, 1939) and the principal of the debt would be discharged by the allotment to the RFC of \$6,605,232 of new first mortgage 3½ per cent bonds and \$6,605,231 of general mortgage series A 4½ per cent bonds.

Holders of each Northern first mortgage bond, Southern Indiana Railway Company first mortgage bond, Bedford Belt Railway Company first mortgage bond, Terre Haute first and refunding mortgage bond, and Terre Haute Income bond outstanding would receive in exchange \$500 of new first mortgage 3½ per cent bonds and \$500 of new general mortgage series A 4½ per cent bonds in settlement of the full amount of the principal of the claim in each case. The interest on the present bonds would be paid or adjusted up to the effective date of the plan at the rates provided in the bonds. The examiner also points out that all accumulations of fixed interest on the company's obligations should be treated in the plan on a parity with the principal of the debt.

Treatment of Northern Consolidated Holders

The holder of each \$1,000 Northern consolidated mortgage bond, with interest fully paid to December 31, 1938, would receive in exchange \$300 of new first mortgage 3½ per cent bonds, \$300 of new general mortgage series A 4½ per cent bonds, \$200 of new general mortgage series B 4½ per cent bonds, and \$200, par value, of new preferred stock. The holders of any Northern consolidated mortgage bonds with interest unpaid thereon would receive amounts of the above-named securities in the same proportions, applied to the principal of the bonds plus unpaid interest up to the effective date of the plan.

The debtor's general mortgage bondholders of series A, B, C, E, and F outstanding, would receive, for each \$1,000 bond and all unpaid interest thereon, approximately \$338 of new first mortgage 3½ per cent bonds, \$338 of new general mortgage series A 4½ per cent bonds, \$225 of new general mortgage series B 4½ per cent bonds, and \$225, par value, of new preferred stock, representing 30 per cent, 30 per cent, 20 per cent and 20 per cent, respectively, of the principal of these bonds

plus unpaid interest up to the effective date of the plan.

The holders of the company's 50 year mortgage bonds outstanding would receive for each \$1,000 bond and all unpaid interest thereon, approximately \$119.50 of new general mortgage series A 4½ per cent bonds, \$119.50 of new general mortgage series B 4½ per cent bonds, \$717.50, par value, of new preferred stock, and 2.4 shares of new common stock, representing 10 per cent, 10 per cent, 60 per cent, and 20 per cent, respectively, of the principal of these bonds plus unpaid interest up to the effective date of the plan.

The Gary first mortgage holders would get for each \$1,000 bond and all unpaid interest thereon, up to the effective date of the plan, approximately 12 shares of new common stock. The holders of the debtor's convertible adjustment mortgage bonds would receive in exchange for each \$1,000 bond and all unpaid interest thereon up to the effective date of the plan, approximately 14.3 shares of new common stock.

Preferred Holders to Get Warrants

The present preferred stockholders would receive, for each share of such stock, a warrant to purchase one-half share of new common stock at the price of \$30 a share to and including December 31, 1943, thereafter to and including December 31, 1948, at \$40 a share, and thereafter to and including December 31, 1953, at \$50 a share. The proposed plan would also provide for the issue of scrip for sums less than \$100 in the case of bonds and for fractional shares of stock. The unsecured claims of general creditors, not entitled to preference, would be allotted one share of new common stock for each \$500 of claim allowed by the court.

Examiner Jameson also recommended that the new or reorganized company should assume the liability for, and pay in due course, any and all taxes due to the United States from the debtor or its trustees for any taxable period prior to the date of confirmation of the plan, without requiring proof thereof and without prejudice by reason of not having been proven. All existing mortgages secured by liens on the properties of the debtor, including the Northern and Gary Lines, and on the properties of the Terre Haute, other than equipment obligations and purchase money liens, would be canceled and discharged, and all bonds issued under such mortgages, either pledged or in the possession of the debtor, would be canceled.

Provision should also be made, in the opinion of Examiner Jameson, for the issuance of \$10,000,000 of additional first mortgage bonds to be sold to provide the new company with funds for additions and betterments, working capital, and the payment of reorganization expenses.

The proposed plan also makes provision for an additions and betterments fund of a maximum of \$5,000,000 annually and a sinking fund of \$624,590.

The proposed plan, which would merge the Chicago, Terre Haute & Southeastern with the Milwaukee, would become effective as of January 1, 1939. The plan would be carried out under the supervision of a reorganization committee of five persons, one to be designated by the trustee of the debtor's general mortgage, one by the trustees of its 50-year mortgage, one by the trustee of its adjustment mortgage, one by the trustee of the Chicago, Terre Haute & Southeastern mortgages, acting collectively, and one by the RFC.

The examiner made no mention in the proposed report of the petitions filed by the protective committees for the preferred stockholders of the Milwaukee and the common stockholders of the Chicago & North Western calling for the consolidation of these two roads.

Electrical Section Distributes Committee Reports

Action taken to sustain interest and avoid interruption of work

REPORTS of the Electrical Section, Engineering Division, Association of American Railroads, have been made available to members. The seventh annual meeting of the Section, which would have been held in October of this year, was postponed but the reports have been issued to indicate progress of committee work and to sustain membership interest.

The more extensive reports are summarized in the following:

Power Supply

The report of the Committee on Power Supply calls attention to a map developed by the Federal Power Commission, by means of which railroads may determine where power supply is available in the territories in which they operate. Recent developments in power plants are cited. The principal of these is the so-called "topping plant" which develops steam at high pressures and temperatures, and uses steam over a wide thermal range to obtain high efficiency. Among the largest of these is the Logan, W. Va., plant of the Appalachian Power Company.

The boiler operates at 1,450 lb. gage pressure, with 850 deg. F. superheat, and has a capacity of 1,000,000 lb. of steam per hour. Exhaust from the high pressure steam turbines has sufficient pressure to operate equipment of lower pressure plants.

A table showing what types of wayside power various railroads are using for air-conditioned trains was compiled by this committee in 1937. It is repeated with corrections and additions in the 1938 report.

Concerning the purchase of electrical energy, the report offers the opinion that it would be desirable for power companies, in so far as possible, to simplify their rate schedules, so that non-technical men can more readily apply the rates to the services desired.

Electrolysis

The first part of the report of Committee 2 on Electrolysis includes a study of leakage of stray currents through foundations of catenary supporting structures. Causes of stray currents with resulting corrosion of structures are shown and mitigative measures are described. The latter part of the report consists of an abstract of a paper written by C. M. Longfield, electrolysis engineer, State Electricity Commission of Victoria, Melbourne, Australia. Experience in Australia indicates that electric drainage is a reliable and workable means of reducing corrosion. Eighty-per cent of all cable faults have occurred within one-half mile of negative rail-taps and the installation of drainage bonds has reduced faults from 201 (telephone and power cable) in 1929 to 26 in 1936. Where potential reverses would nullify the value of a drainage bond, a plate-type copper-oxide rectifier is connected in the drainage circuit. Where a very low resistance drain is required a small

boosting transformer is installed. The power used is so little that in many cases the kw.hr. meter is omitted.

Standardization

The major portion of the report on Standardization of Apparatus and Materials is given over to proposed A. A. R. specifications for rubber-insulated wires and cables and to proposed Federal specifications for conduit and fittings. The wire and cable specifications include No. 14 A. W. G. and larger to be used principally for electric lighting, power transmission and electric traction purposes. The specifications incorporate as closely as possible those of A. S. A. and A. S. T. M. standards.

The proposed Federal specifications for conduit and fittings will, upon acceptance by the Bureau of Standards, supersede the present industry standard.

Electric Heating and Welding

Reconditioning of flood-damaged equipment is covered in considerable detail. Methods are described for cleaning and drying electrical apparatus, attention being given to the economics involved. It is suggested that a well-recognized force with the necessary equipment and all available information on the task to be performed can do a better job in much less time than can be done with a larger, unorganized force.

Application of Motors

New developments in the motor field are described. These include high torque, general purpose capacitor motors, employing a capacitor-start, induction-run design; a two-speed split-capacitor fan motor; large synchronous motors, some of which have an efficiency of 97.9 per cent; explosion-proof, direct-current motors, suitable for operation in gasoline vapors; high-speed polyphase induction motors, having a closed-circuit system of ventilation employing inert gas; and single-phase repulsion motors of considerably reduced size and weight per unit horsepower.

Methods for designing motor-supply circuits are also suggested. These include means of determining the ratio of inductance to resistance and of calculating the value of using static capacitors at the load end of the circuit to improve power factor and reduce the amount of copper required in the circuit.

Transfer of Inflammable Liquids

The 1938 report of the Committee on Protective Devices and Safety Rules in Electrified Territory is concerned primarily with recommended practice for the prevention of electric sparks that may cause fire during the transfer of inflammable liquids. Diagrams are included to show where insulated joints should be used and how tracks and wayside facilities should be bonded to avoid

hazards. Similar specifications are included for transfer of inflammable liquids between tanks and wayside or skyway vehicles, as well as between units of highway or skyway vehicles.

Track and Third-Rail Bonds

The report of the Committee on Specifications for Track and Third-rail Bonds is devoted to a study of the effect of rail welding on bonds and the effect of applying welded bonds to rail ends. A report made by this committee in 1926 stated that there was no objection to the use of welded bonds provided they were applied to the head of the rail and within the limits of the splice bar. The 1938 report states there is at present no reason to change this conclusion, but adds supplementary information. A study made by one large rail manufacturer indicates that the application of welded bonds tends to nullify the effect of mill heat treatment and lowers the hardness of the rail in some cases to below the "as rolled" hardness.

It has been found that welded, brazed or mechanically-applied bonds may be successfully protected by plastic heat insulation during the process of field heat treating of rail ends when the process consists of the rapid heating of the rail head surface for 15 to 20 seconds by high-temperature flame and then allowing the rail ends to air cool. In other processes where pre-heating and quenching are involved, or where the pre-heating is induced by electric induction methods, the bonds cannot be protected and should be removed. In most of the welding processes used to build up rail ends and joints the temperature of the rails becomes so high as to necessitate removal and re-application of bonds. The report also includes a table outlining the bonding practices of 17 railroads and the number and types of failures experienced.

Illumination

Recent developments of incandescent lamps are listed in the report of the Committee on Illumination. These include lamps having the recoiled filament which results in an increase of 10 per cent in efficiency; a 300-watt medium screw base lamp; 500- and 750-watt bipost base lamps; a 100-watt mercury-vapor lamp; fluorescent Lumiline lamps in three sizes and six colors; and the "Sterilamp," which is not essentially a lighting unit, but is suitable for sterilization in refrigerated spaces.

The major part of the report is concerned with floodlighting of railroad yards. Suggestions are made for the location of lighting towers, the selection of floodlight projectors and design procedure.

The officers of the section are: Chairman, H. F. Brown, assistant electrical engineer, New York, New Haven & Hartford, New Haven, Conn.; vice-chairman, D. B. Thompson, mechanical and electrical engineer, New York Central, New York, N. Y.; secretary, Walter S. Lacher, 59 East Van Buren Street, Chicago, Ill.

Fuel Trends Studied

WHAT is happening to coal, the principal railroad fuel and one of the principal sources of railway freight revenues, is the subject of two unusual charts which have been prepared by the National Bituminous Coal Commission and circulated by the National Bituminous Coal Association as a part of a nation-wide campaign recently launched by bituminous coal operators among dealers and consumers, including railroads, to

meet the competition of substitute fuels and recapture lost markets. As reproduced by this paper these charts picture the comparative growth in the use of anthracite coal, bituminous coal, natural gas and water power in the United States since 1918 and also the proportion of the total energy output which was produced by each of these fuels annually from 1899 to 1937.

The figures show that anthracite production has declined 48 per cent since 1918 and bituminous coal pro-

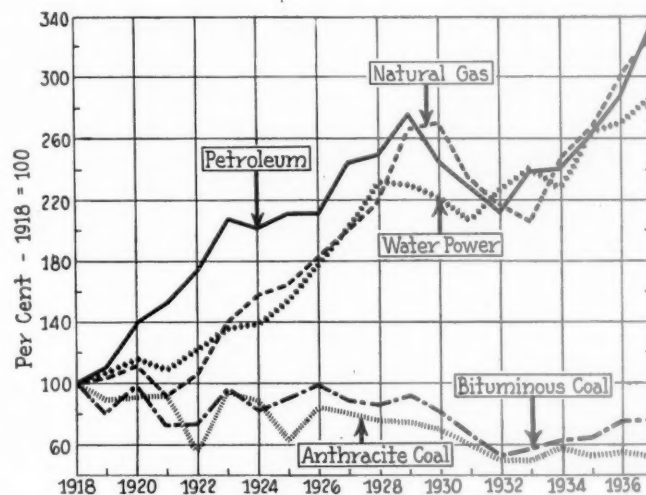


Chart Showing by Index Values the Relative Rate of Growth of Anthracite Coal, Bituminous Coal, Water Power, Natural Gas and Petroleum in the United States, 1918-1937

duction has declined 25 per cent while in the same period there was a 186 per cent increase in water power, a 224 per cent increase in natural gas and a 230 per cent increase in petroleum. It is also shown that anthracite coal furnished only 5.4 per cent of the energy produced in this country in 1937, as compared with 22.1 per cent in 1899 and bituminous coal furnished only 45.3 per cent of the energy output in 1937 as compared with 68.2 per cent in 1899—a total decline in the coal energy from 90.3 per cent in 1899 to 50.7 per cent in 1937. During the same 38 years the energy contributed by water power increased from 1.8 per cent to 9.4 per cent, the energy

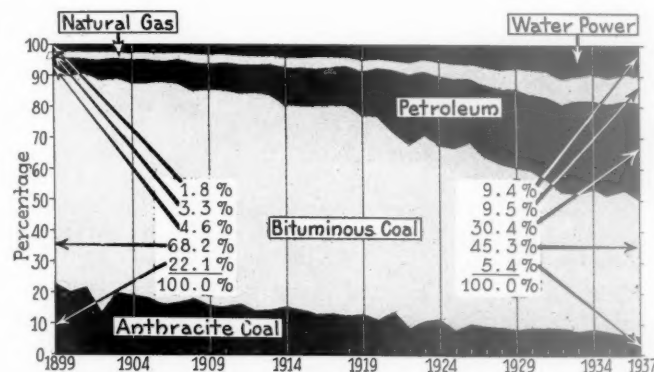


Chart Showing the Percentage of Total Energy in B. T. U. Equivalents, Contributed by Anthracite Coal, Bituminous Coal, Petroleum, Natural Gas and Water Power in the United States, 1899-1937

from natural gas increased from 3.3 per cent to 9.5 per cent and that from petroleum from 4.6 per cent to 30.4 per cent—a gain in the relative position of water power.

natural gas and petroleum from 9.7 per cent in 1899 to 49.3 per cent in 1937.

There has, of course, been an increase in the total energy output but the increase, both relative and absolute, in the growth of natural gas, water power and petroleum and the decline, both relative and absolute, in the use of coal is regarded with concern by the coal trade and it is being pointed out to the railroads not only that the railroads consume 20 per cent of all of the coal produced but also that coal transportation produces directly 20 to 25 per cent of the combined freight revenues of the railroads as compared with less than 8 per cent from the transportation of petroleum and petroleum products, and little or nothing from the distribution of water power and natural gas. Total production of bituminous and anthracite coal for the year 1938 up to September 24, totaled 250,092,000 tons, a reduction of 27.5 per cent from the production in the same period of 1937, while the production of crude petroleum, equivalent to 201,958,000 tons of coal, declined 4.6 per cent from the production in the corresponding period of 1937.

Roads Withdraw Wage Reduction

THE railroads will withdraw their demand for a 15 per cent reduction in wages. Action to this effect was taken at the annual meeting of the Association of American Railroads at Chicago on November 4. By this action the railways will comply with the recommendation of the President's fact-finding committee.

The meeting at Chicago was called in response to President Roosevelt's request on October 31 for early advice regarding the attitude of the railway managements towards the findings of the emergency board. In a telegram sent to President Roosevelt in the afternoon, J. J. Pelley, president of the Association of American Railroads, said:

The chief executives of the railroads concerned met in Chicago today to consider the situation created by the report of the board. I advised them of your expressed desire to be of help in the present situation, and of your hope that there will be developed a constructive program of legislation which you will be able to support at the next session of congress. I have, therefore, been authorized to advise you that the railroads will withdraw the present notices of wage reductions. The railroads are taking this action, not because they agree with the conclusions reached by the board, but because they recognize the gravity of the situation, and because they hope that out of it there will come, through the co-operation of all concerned, a sounder and more equitable transportation policy in this country.

The action taken by the railroads entailed little discussion and moved rapidly. The meeting opened at 10:00 a. m. and by 12:30 p. m. withdrawal had been decided upon, officers and directors re-elected and reports of the association had been heard and approved.

The withdrawal of the demand for a 15 per cent wage reduction brings to a close the long drawn out procedure of the Labor Act. Notices were filed on May 12 and when conferences between employees and individual railroads resulted in the refusal of the employees to accept the reduction, negotiations in compliance with the Railway Labor Act were begun at Chicago on July 18. After 25 days of fruitless negotiations the aid of the National Mediation Board was invoked on August 11, and mediation collapsed on August 31. The President then appointed an emergency board on September 27, and this board began hearings on September 30. Hear-

ings were concluded on October 17, and the board had until October 27 to report its findings to the President. On October 26, however, the emergency board was given a 48-hour extension of time and made its report on November 5.

"Everybody Happy," Says Roosevelt

When word of management's decision reached him at Hyde Park, N. Y., President Roosevelt expressed gratification over the outcome. "Everybody in the nation is happy that the railroads will withdraw the notices of wage reductions," he said in a formal statement. "I join with railroad management and railroad employees in hoping that we can develop and put through a constructive program of legislation at the next session of Congress." At Washington, George M. Harrison, chairman of the Railway Labor Executives' Association, hailed the announcement as one which "clears the way for genuine cooperation between labor and rail management to develop a program of legislative assistance for the carriers."

In the latter connection, as anticipated by the President last week, his committee-of-six was prompt in resuming its deliberations; it held a one-day meeting in Washington on November 7, after which it adjourned to a date to be announced later. Carl R. Gray, vice-chairman of the Union Pacific, who acted as spokesman for the group, said that the November 7 meeting was an exploratory one, dealing in the main with a basis of procedure. As Mr. Gray put it in a brief formal statement, the committee "had a very full discussion all day long on this subject and we have different lines of approach on the thing. We will now each of us start working on the subject, each approaching it from different lines and each reflecting his own ideas in regard to the different elements we have discussed."

Members of the Committee-of-Six

Management members of the committee-of-six, in addition to Mr. Gray, are M. W. Clement, president of the Pennsylvania, and E. E. Norris, president of the Southern; labor members, in addition to Mr. Harrison, are D. B. Robertson, president of the Brotherhood of Locomotive Firemen & Enginemen, and B. M. Jewell, president, Railway Employees Department, American Federation of Labor.

Although, as stated above, Mr. Gray acted as the committee's spokesman, Mr. Harrison also talked to reporters in order to brand as "ridiculous" a rumor, which has received some publicity, to the effect that the Emergency Board obtained the 48-hour extension of time in which to make its report in order to change its recommendation from one suggesting a suspension of last year's increases to that recommending withdrawal of the notices. The rumor had it that when Mr. Harrison heard that a finding along the former lines was in the making, he visited the White House to register a protest which was followed by the extension of time in which to alter the board's conclusions. To this Mr. Harrison replied that he had not seen the President from the time of the hearings' close until October 31, two days after the wage report was made public, when he and A. A. R. President Pelley made separate calls at the White House at the invitation of the President.

THE EAST INDIAN RAILWAY will place painted advertisements on the sides of its broad-gage passenger, baggage and parcels cars, as an innovation in Indian publicity methods. The design of the advertisements will be worked out in company shops.



Merchandise Is Given Fast, Flexible Service On the G. M. & N.

Building a Highway Subsidiary

Gulf, Mobile & Northern makes strides in the establishment of co-ordinated rail, bus and truck service

BEGINNING with a few isolated lines in 1930, the Gulf, Mobile & Northern has proceeded rapidly in the development of its highway operations which are auxiliary to and supplemental to its rail operations. Since February, 1936, its wholly owned subsidiary, the Gulf Transport Company, has played a large part in this development. Drawing upon the experience it has gained in its early experiments in this field, the parent company is expanding its operations and is undertaking to extend the benefits thereof to its entire system. When com-

pleted, these co-ordinated services will not only provide a flexible train connection service for the streamlined Rebels and other passenger trains operated by the G. M. & N., but also, by the use of trucks, will supply a faster and more frequent merchandise service. The end to which the railroad is working is to be in a position to transport passengers, l. c. l. freight, mail and express entirely by rail, or entirely by motor vehicle, or by a combination of both agencies, depending on which agency or combination of agencies will provide the pub-



The Streamlined "Rebel" and One of Its Bus Connections

lic with a more economical and faster service. Generally speaking, bus and truck routes are over highways which strictly parallel the rails of the G. M. & N. In instances where there are no highways near the railroad, the nearest practicable highways are used. Service is provided to G. M. & N. stations and to inland towns which are not serviced by a railroad. Freight service is not provided to local stations on other rail lines.

Bus Operations

The bus operations of the Gulf Transport Company may be divided generally into three classes: auxiliary service along branch lines of the railroad, supplementary service along the main line, and service over feeder routes which extend through a territory normally served from G. M. & N. rail stations. The G. M. & N. main line is paralleled by bus routes from a point near the Tennessee state line (Ripley, Miss.) to Laurel, Miss., a distance of 233 miles. There is in operation a feeder line from Pontotoc, Miss., to Ackerman, through a territory immediately to the west of the G. M. & N.; and another feeder line from Kosciusko, Miss., through an area not served by any north and south railroad, to Laurel, Miss. This route passes through Walnut Grove, Miss., a station on the New Orleans line of the G. M. & N. and Bay Springs, a point on the Mobile line.

Passenger service on convenient schedules is provided on the railroad's Bogue Chitto branch by the buses of the Transport Company. These routes extend between Bogalusa, La., and Tylertown, Miss., via Franklinton, La. In addition to the through buses to Tylertown which operate over the direct route between Bogalusa and Franklinton, a service is also provided daily between the two latter points via Rio, La., over routes paralleling the railroad's branch and main lines.

The schedules of the buses are so arranged as to provide convenient connections with the schedules of rail lines and other bus lines. Along the railroad's main line, train and bus tickets are interchangeable and the passenger is given the option of using either or both forms of transportation as best suits his convenience. All of the buses handle package express, and some transport U. S. mail as well.

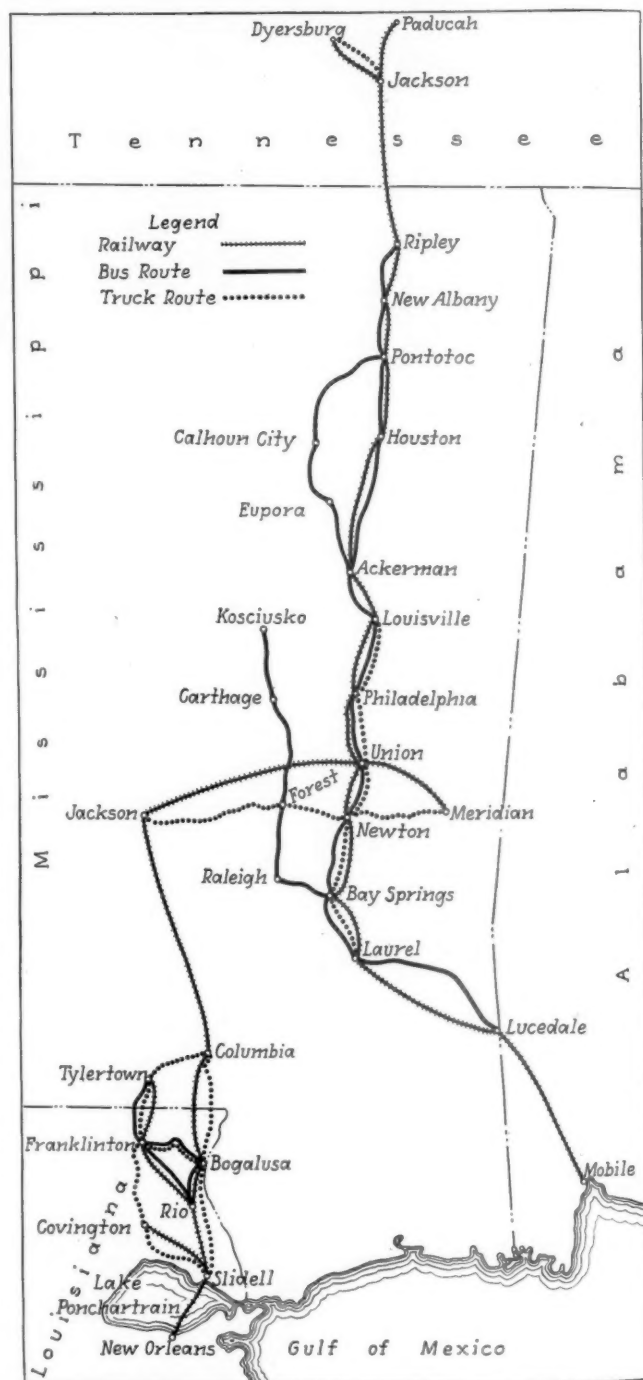
Truck Operations

The highway freight operations along the G. M. & N. are also varied. Gulf Transport Company trucks, along the Dyersburg Branch between Jackson and Dyersburg, Tenn., take care of the less-than-carload freight and express traffic and provide faster and more flexible service than can be provided by trains alone.

A number of G. T. C. highway routes radiate from Bogalusa, La., to the north, south and west. Over these routes, first morning delivery of merchandise freight is made from New Orleans, from Jackson, Miss., and from points north, to stations on the G. M. & N.'s main line and branch lines in Louisiana, and in south Mississippi—a expedited service that could not be provided with rail service alone.

The Transport Company also operates motor trucks over U. S. Highway 80 from Jackson, Miss., to Meridian, a distance of 92 miles, providing an additional local and through l. c. l. service on eastbound and westbound traffic. The trucks engaged on this route are used at Meridian in transfer service between the various freight stations during the day, making cross-country runs at night. The use of this highway is an illustration of the Gulf Transport Company's operating over the nearest practicable highway to the rail line of its parent company where no

highway closely parallels the railroad. At several points, a distance of 17 miles separates Highway 80 and the railroad right-of-way; and, as this truck route extends through a number of local stations of another railroad, the Gulf Transport Company serves no intermediate



The G. M. & N. Is Building a Co-ordinated Service to Cover Its Entire Railroad

point between Jackson and Meridian except Newton, which is a station on the G. M. & N.

Fast merchandise service to small way-stations of the G. M. & N. between Louisville, Miss., and Mobile, Alabama, a distance of 229 miles, is supplied by a series of contract truck operations, whose owners receive their compensation from the railroad on either a trip or monthly basis. These contract trucks operate between station houses of the G. M. & N. and handle no freight

over the routes involved except freight moving on railroad billing.

All of the highway operations, both passenger and freight, are under the general supervision of the operating department of the railroad. Through this widespread organization, the highway operations are given close and intensive supervision. Unused G. M. & N. freighthouse space, its telegraph and telephone system, and many other railroad facilities are employed with the result that greatly improved service is offered. At the present time 10 buses and 12 trucks are engaged in these highway operations. Most of the equipment is maintained at the repair garages of the Gulf Transport Company at Bogalusa, La., and at Louisville, Miss., where there are complete facilities for first class maintenance and general overhauling.

Employees engaged in highway operations are carefully selected. They are required to stand a rigid medical examination before being employed, and physical examinations are provided at intervals of one year. A set of operating rules, included among which are the safety rules of the Interstate Commerce Commission, has been formulated and each bus and truck operator must know these rules and observe them. Frequent safety meetings and examinations on the rules have resulted in safe and efficient highway operations. The Gulf Transport Company is a participant in the National Safety Council's National Fleet Contest. Its safety record has been impressive. For the 19-month period ending July 31, 1938, in the course of over a million miles of highway operations, there have been only two reportable injuries, both of which were of a very minor nature.

Communications and Books . . .

Why Trucks Can Take Away Railway Traffic

WESTMOUNT, QUEBEC.

TO THE EDITOR:

What's wrong with the railways? The enclosed illustration from the New York Times of September 25, supplies one of the answers. It shows a new alignment of Highway No. 5 N. Y. near Little Falls. A three-mile link, costing about \$1,000,000 to build, part of the Albany-Buffalo highway, it shortens the way for trucks formerly forced to detour by low bridges on the old route.

A million dollar subsidy to trucking interests—that is what it is. Had the New York Central desired a cut-off for like economical reasons, it would have had to dig down into its own jeans for the cash. The State obliged the trucking interests by building this cut-off for them and saddling the cost on us, the taxpayers, some of whom are unfortunate enough to be direct, if small, investors in railroad stocks, and indirect through life insurance. A million dollar highway is handed to the motoring trucking interests gratis, so they can the more effectively drain the railways of their life blood. The railways finance their own right-of-way, are burdened with mounting taxes because they are fair game for the tax assessors, and then the tax-payers, including the railways, are saddled with the expense for an improvement wholly designed for the benefit of a competitive industry.

Further comment is needless. The irony of this situation is as biting as it is revealing. Some day the people are going to wake up when the railroad goose laying the golden eggs for the taxpayer is dead. Will the motor-trucking industry, when that day comes, comfort the folks by coming across? It is to laugh. Verily Puck was right in his famous comment on us mortals.

L. GERARD SMITH.

Economist Brands Harrison Pamphlet Fallacious

HOBOKEN, N. J.

TO THE EDITOR:

A pamphlet, "The Wages of Railroad Labor 1938," is issued over the name of George M. Harrison, chairman, Railway Labor Executives' Association. This pamphlet lists seven specific reasons why railroad wages should not be reduced. The writer does not here argue that railroad wages *should* be reduced. But two or three of the points are so incompletely—not to say unfairly—presented that a few words of qualification, or in supplement, may be appropriate.

1. "The hourly compensation of railroad employees is but one cent higher than it was 18 years ago."

But money goes farther. The Bureau of Labor's cost of liv-

ing index was 116.2 for 1920 (Statistical Abstract of the United States, 1937—hereafter referred to as S. A.—page 305), was 83.3 June 15, 1938. The hourly wages 71.1 cents in 1920, 72.1 cents in 1938, consequently yield buying powers, in terms of the 1923-25 standard price level, of 61 and 87 cents respectively. Thus *real* hourly wages have advanced 43 per cent.

From 1920 to 1935 (S. A., p. 375) average annual dollar earnings on railroads decreased 9 per cent. In factories, all the factories in the country, they decreased 12 per cent (S. A., p. 738) from 1919 to 1935, 13 per cent from 1921 to 1935.

It is something less than convincing that 1920 should have been taken as a base year with which to compare present wages. In that year, the war boom was still with us. Prices of commodities were highest in our whole history, before or since (S. A., p. 300). In many ways, it was an abnormal year for railroads. Operating revenues of operating companies were the highest they had ever been, and 52 per cent above the 1937 level (S. A., p. 383). But operating expenses were at an all-time high. The record of operating expenses for that year has never been touched since. Total annual compensation of employees (Class I carriers—S. A., p. 375) was 30 per cent higher than in 1919, 33 per cent higher than in 1921, and still stands as an all-time high. Resulting from these boom conditions, net operating revenue was at its low point for the whole period 1891-1937 (S. A., p. 383): less in fact, than half that realized in any year since 1920. Net railway operating income was \$12,101,000. Out of this, plus "other income" derived from investments, etc., must be found what can be found for rentals, reserves, additions and betterments, interest on bonds and dividends (?) on a twenty billion dollar property. Is it proposed to return the railroads to this level? The railroads could not afford to pay the wages they did pay in 1920.

2. "Railroad wages are not now and never have been a drain on the revenues of the railroad industry."

In few activities are wages as important a drain. Wages were 47½ per cent of operating revenue in 1932, 47 per cent in 1935 (S. A., pp. 375, 383). In manufacturing (S. A., p. 738) in 1935 they were 39 per cent of the value of product ("added value"). In commercial electric central stations (S. A., pp. 352, 353) in 1932 they were 15 per cent. In telephone companies in 1932 (S. A., p. 345) they were 40 per cent.

3. "Railroad traffic and revenue have shown a remarkable and unexpected improvement—during the past several months."

There was some improvement. Operating revenues for 1937 were better than in 1932, 1933, 1934, 1935. Expenses kept pace. Operating ratio was 75 per cent in 1937 as in 1935. Late 1937 saw a drop in revenues, which has continued. For August, 1938, operating revenue was \$315 million against \$360 million in 1937. For eight months through August the figures were

1938—\$2,251 million
1937—\$2,811 million

The former figure, off 20 per cent, is only six per cent above the corresponding 1933-35 average.

4. "—a top-heavy capital structure is a parasite—heavy bonded

indebtedness—fundamental causes of the railroads' financial troubles."

In the effort to prove this, the pamphlet compares the amounts of stocks and bonds actually outstanding, with the cost of reproduction less depreciation as determined for the Interstate Commerce Commission. This is done in the pamphlet for 29 selected roads—the selection being deliberately adverse, since it includes such typical "hard cases" as Nickel Plate, Erie, C. G. W. and even the N. Y. S. & W. and the N. Y. O. & W. And when all this is done, it is found that the I. C. C. "valuation" for the 29 roads selected is 78 per cent of the capitalization. If the railroads as a whole could earn a decent return on 78 per cent of their capitalization, they would have nothing more to ask.

On the 78 per cent basis, undoubtedly too low for the aggregate, the railroads are worth about \$17.2 billion. Over the period 1932-35, average net railway operating income available for compensation to this capital was \$443 million or 2.6 per cent. What manufacturer or merchant would care to do business on this basis? In the "remarkable improvement" year 1937 the net railway operation income was 3.4 per cent of the assumed \$17.2 billion investment.

According to the pamphlet, the New Haven road had \$4,591,000 net railway operating income with which to meet \$14,556,000 of fixed charges in 1937. (This is offered to prove that fixed charges are the root of the evil.) But New Haven's "valuation" is 91 per cent of its capitalization. If fixed charges were correspondingly reduced they would still be \$13,300,000 or there would be an operating deficit after charges of \$8,709,000, even with the "water" all squeezed out. The operating return on the New Haven's admitted investment in 1937 was 1.08 per cent.

W. D. ENNIS,

Stevens Institute of Technology,
Department of Economics of
Engineering.

Sees Pay Cut Through Inflation

TO THE EDITOR:

YORK, PA.

Please try to make the railway industry understand that a great many people think rail workers are too highly paid. In spite of Dr. Gallup's polls, *people in rural sections always look on the railroads as a high tariff wall over which their goods have to go before they can get to market.* Why, the country people ask, should the people who haul their goods to market be paid more than the ones who actually do the growing. Hence the rural folks use automobiles, trucks—anything they can—which can be run by laborers whose scale of pay is comparable to those of farmers.

If the labor leaders were in earnest about wanting to help the poorly paid men, they would have offered to cut wages by varying percentages—for example, figure monthly pay at present rates and deduct 1 per cent from total for every ten dollars more than one hundred earned during the month.

Everyone's wages will eventually be cut by inflation if no one has courage enough to do it any other way.

WM. GORDON LEWIS.

Water Free, But How About the Cup?

TO THE EDITOR:

On one of the recent hot August days the writer spent several hours in and around the union station at St. Louis studying that facility and the people who work in and use it. At the main entrance, as one entered the air-cooled waiting room, was a large placard, possibly ten feet by eight feet, carrying one of the current messages of the Association of American Railroads to the public. While considering the problem faced by our railroads and the steps taken to meet that problem, the realization of the fact that there apparently was no place where

an intending passenger could secure a drink of water without first purchasing a paper drinking cup came as somewhat of a mild shock. For forty-five minutes during the late afternoon, the main waiting room source of drinking water was under constant observation. During that time not a single coin was placed in the paper cup vending machine nor did anybody take a drink of water. Some trains arrived and departed during the period of observation and the station was well populated.

The heart of our railroad industry is represented by the tenants of the station. At a time when every effort is being made to win the confidence and patronage of the rank-and-file of our population by the dramatic introduction of new or re-modeled rolling stock, relatively low passenger rates and contact by every known means of publicity, why is a picayunish source of incidental revenue allowed to arouse a contempt in the minds of many persons which completely overshadows the great improvements which the railroad industry has been making?

RAILWAY AGE READER.

New Books

Trains, by Robert Selph Henry. New Edition. 110 pages. 12 in. by 9 in. Bound in cloth. Published by the Bobbs-Merrill Company, Indianapolis, Ind. Price \$1.75.

This new edition of Col. Henry's popular book on railroading constitutes the third printing of a work first published in 1934. The original text and illustrations have been changed only for "modernization" purposes, and the modification is limited almost entirely to new rolling stock developments. Thus, artists' conceptions of streamlined locomotives which appeared in the early editions have been replaced by photographs of the real thing in operation today and interior views of such inconstant places as "Inside the Newest Pullman" have been changed accordingly. Minor changes in the section on "Competition and Regulation" are also to be noted.

Transportation on the Western Front, 1914-1918, compiled by Colonel A. M. Henniker. 531 pages. 8½ in. by 5½ in. Bound in cloth. Published by H. M. Stationery Office, London, England. Price \$5.50.

This detailed compendium constitutes the British parallel to Col. William J. Wilgus' "Transporting the A. E. F. in Western Europe, 1917-1919." It is heavier in style, however, and is admittedly a compilation rather than a creative piece of historical writing. Replete as it is with reprints of orders, schedules, agreements, etc., and accompanied by a large number of individual maps carried in a separate container, the work will no doubt furnish fascinating reading for the lover of military affairs and strategy.

For the American railroader the book should become largely a perpetual remainder of past errors and omissions in the attempt to adapt the machinery of transportation agencies to the peculiar and insistent needs of large-scale warfare on foreign ground. As did the American forces, the British found it difficult to merge the essentially civil character of railroading with military routine and a welter of quarrels, jealousies and incompetence resulted. Special problems existing in the necessity of co-ordinating efforts with the French railways also arose; their solution makes a long but fascinating tale. On the whole, the British ultimately achieved an efficient military transport set-up; how they did it ought not to be forgotten.

Certain isolated observations of Col. Henniker which appear significant are here set forth: "Experience showed that the maintenance of a force in the field was a more complicated traffic problem than a strategic troop movement. . . . The movements involved cannot be settled beforehand and worked to a program. Every day produces a crop of new demands for transport, every one of which is a matter for special arrangement. . . . The experience of the Western Front was that in the case of traffic by inland water transport, over light railways, roads and through docks there was little need of intermediaries between the military authorities requiring transport and the technical services providing it; that it was only in the case of railway traffic that a special branch was needed."

NEWS

Streamliners Make Money, Says Report

Report analyzes present fleet; new trains win traffic; earn substantial net

Reviewing in varying degrees of completeness the operation of some 76 high-speed "luxury" trains which have been introduced on American railroads in the last four years, Coverdale & Colpitts, consulting engineers, New York, conclude that "Every lightweight streamlined train operating in this country has produced additional passenger traffic and substantial earnings for the railroad placing it in service." In the 68-page report on "Streamline, Light-Weight, High-Speed Passenger Trains," which Coverdale & Colpitts have prepared for the Edward G. Budd Manufacturing Company, Philadelphia, Pa., there are contained short histories of each train selected for treatment, classified by operating roads, details of the trains themselves, characteristics of their present routes, speed statistics, and, where obtainable, revenue and traffic figures.

The authors of the report do not hold brief for completeness. Performance records of such trains as the Union Pacific's "Challengers" and the Santa Fe's "Chiefs" are omitted from the report on the grounds that they carry some conventional cars, are hauled by steam locomotives and are on slower schedules than the streamliners proper. On the other hand, the Chicago & North Western's "400," also a conventional steam-hauled train, is afforded full analysis. Again, the "Twentieth Century" and "Commodore Vanderbilt" of the New York Central and the "Broadway" and other trains of the Pennsylvania are mentioned only in passing because, at time of writing of the report (June 30), their new equipment had been in operation only 15 days. Furthermore, revenue figures are omitted for the "Royal Blue" and the "Crusader" because they were not available for the report.

The authors state that the report is based wholly on records compiled by the accounting staffs of the respective railroads and assert that the information given therein is, therefore, authoritative. They point out, however, that the items in the statements are not entirely comparable, one railroad with another, and warn that care must be used in making comparisons of specific items. They conclude that "each statement presents an accurate record of the results of operation of the in-

dividual trains for the year ended June 30, 1938, or for a lesser period in the cases of trains installed within the year."

The report also notes that the statements of revenues and expenses of the trains do not include the items of interest, depreciation, taxes or insurance, since these overhead charges are not directly apportionable to train operation. Terminal rentals are also omitted from the calculations.

The Denver "Zephyrs," of the Chicago, Burlington & Quincy, produced the highest ratio of earnings of any train of this type in the year ended June 30, 1938, the report shows. Building up a gross revenue of \$2,088,938, these trains earned a net of \$1,568,831, or 75.1 per cent of the gross and \$2.07 per train-mile. Highest net revenues per train-mile were earned by the two "Daylights" of the Southern Pacific, operating between Los Angeles, Cal., and San Francisco, and the two "Hiawathas" of the Chicago, Milwaukee, St. Paul & Pacific, the report reveals, the former rolling up \$3.211 per train-mile and the latter, \$3.217. In August, 1937, during the summer vacation season, the "Daylight" trains took in fares aggregating \$6.28 per train mile. Of the long distance sleeping-car trains, the "City of San Francisco," operated by the Chicago & North Western, Union Pacific and Southern Pacific between Chicago and San Francisco, shows the highest net per train-mile,—\$2.529.

Chicago-Denver, Colo., runs appear to be the leaders in daily mileage. Each of the two "City of Denver" trains of the North Western-Union Pacific run 1,048 miles each day, while each of the Burlington's Denver "Zephyrs" cover 1,036 miles daily. The record for average speed seems to be held as well by the Denver "Zephyrs" for their 66 m.p.h. average speed on scheduled runs (one of these trains made a non-stop run of 1,017 miles from Chicago to Denver in 12 hours 12 min., at the average speed of 83.4 m.p.h. on October 23, 1936).

The Atchison, Topeka & Santa Fe, now possessing the largest fleet of streamlined trains, actually had only one of these, the "Super Chief," in operation before the beginning of 1938, but these trains still produced \$1,306,928 in gross revenue, with a net earning of \$1.27 per mile. The ratio of net earnings to the gross was 61.3 per cent.

Of 28,395 passengers carried by the "Pioneer," "Twin," "Sam Houston" and "Ozark State" Zephyrs of the Burlington, 6,187, or 21.8 of the total, answered periodical questionnaires to the effect that they would have traveled by auto, bus or plane had not the Zephyr service been available. These and similar statistics not included on

(Continued on page 723)

I. C. C. Imposes Labor Conditions

Would force L. & A. and C. R. I. & P. to provide for their displaced employees

In two cases—one, the application of the Chicago, Rock Island & Pacific to lease the properties of the Chicago, Rock Island & Gulf and the other, the application of the Louisiana & Arkansas to acquire control of the Louisiana, Arkansas & Texas by acceptance of the latter's common stock and to merge the two properties into the Louisiana & Arkansas—Division 4 of the Interstate Commerce Commission has granted the authority asked for but withheld the formal order until both applicants agree to certain provisions designed to protect employees of the merged roads who might lose their jobs because of the consolidations. In both cases Commissioner Mahaffie dissented in part, saying that he did not believe that the commission has the authority to force railroads to agree to such terms before a contemplated merger or consolidation can be accomplished.

The Brotherhood of Railway Clerks had intervened in the L. & A. case, and had asked the commission to provide for "reasonable" protection for the clerks employed on the two roads, but, according to the commission, the union "made no specific suggestion in this case as to what it considered 'reasonable protection'." Instead, it asked the commission to determine in the light of the Washington agreement, signed in May, 1936, between 219 railroads and 21 standard railway labor organizations, what "reasonable protection" should be.

The conditions on which the commission will authorize the merger of the L. & A. and the L. A. & T. are as follows:

1. The Louisiana & Arkansas and the Louisiana, Arkansas & Texas shall establish a list for each department of their general office employees, hereinafter designated as employee or employees, listing such employees according to the dates they were employed by such carriers, and the carriers, in determining which employees are to be retained at reduced compensation, those who are to be dismissed, and those who will be required to change the place of their residence, as a result of the merger, shall be governed by the seniority in service as established by said lists.

2. No employee of the carriers, who is continued in service shall, for a period of five years from the effective date of said merger, be placed, as a result of said merger, in a worse position with respect to compensation and rules governing working conditions than he occupied at the date of said merger, so long as he is unable to obtain a clerical position on the merged properties of the Louisiana & Arkansas producing compensation equal to or exceeding the compensation of the position held by him at the date of said merger; that so long as he is unable to obtain a clerical position with said Louisiana & Arkansas yielding compensation equal to or exceeding his

compensation at the date of said merger, he shall be entitled to a monthly allowance equal to the difference between the monthly compensation of the position in which he is retained and the compensation of the position in which he was displaced, the latter monthly compensation to be considered one-twelfth of the total compensation received by him in the twelve months prior to his displacement, less compensation at the rate of compensation of his retained position for any time lost on account of his voluntary absences, provided, however, that the employee's compensation which it is the purpose of this condition to guarantee shall in no case exceed that which he received in the 12 months prior to his displacement, reduced by any change in wage scales or revisions of rules detrimental to the employee, which change or revision is made to affect railroad employees generally; and provided further that nothing herein shall operate to affect in any respect the retirement on pension or annuity rights and privileges in respect of any of the employees; and provided further, that if any employee elects not to accept a clerical position offered him by the said Louisiana & Arkansas, he shall be entitled to no allowance.

3. Any employee of the carriers who is deprived of employment on said merged properties, hereinafter designated as a dismissed employee, as a result of said merger, shall be accorded a monthly allowance, designated dismissal allowance, based on length of service (except in the case of an employee with less than one year of service) equivalent to 60 per cent of the average monthly compensation of said dismissed employee during the last twelve months of his employment in which he earned compensation prior to the date he is first deprived of employment; that this allowance be made to each dismissed employee while unemployed during the period beginning with the date he is deprived of employment and extending in each instance for a length of time determined and limited by the following schedule:

Length of Service	Period of Payment
1 yr. and less than 2 yrs.....	6 months
2 yrs. and less than 3 yrs.....	12 months
3 yrs. and less than 5 yrs.....	18 months
5 yrs. and less than 10 yrs.....	36 months
10 yrs. and less than 15 yrs.....	48 months
15 yrs. and over	60 months

provided, that a dismissal allowance shall cease prior to the expiration of the prescribed period in the event of failure of the employee without good cause to return to service after being notified by the Louisiana & Arkansas of a clerical position which he may have, and provided further that the dismissal allowance of any dismissed employee who is otherwise employed shall be reduced to the extent that his monthly earnings in such employment and his dismissal allowance exceeds the amount upon which his dismissal allowance is based. An employee shall not be regarded as a dismissed employee in case of his resignation, death, retirement on pension or annuity, dismissal for good cause, or furlough because of reduction of forces due to seasonal requirements. A dismissal allowance shall cease prior to the expiration of the prescribed period in the event of resignation, death, or retirement on pension or annuity.

4. Any employee who is retained in service on the merged properties, or who is reemployed from the group of employees entitled to receive a dismissal allowance, who is required to change the point of his employment as a result of said merger, designated as a transferred employee, and who is required, within one year from the date of said merger, to move his place of residence, shall be reimbursed for expense of moving his household and other personal effects, for the traveling expenses of himself and his immediate family, and his own actual wage loss, not to exceed two days, the exact extent of the responsibility of the Louisiana & Arkansas to be agreed upon in advance by the said Louisiana & Arkansas and the employee affected, provided, however, that changes in places of residence subsequent to the initial change caused by the said merger and which result from the employee's acceptance of a different position on said merged properties shall not be considered within the foregoing provision.

5. Any transferred employee who owns his home, or an equity therein, shall be protected against any loss suffered in the sale thereof within one year of the effective date of said merger, for not less than its fair value, such fair value to be determined as of a date 30 days prior to the filing of the application in this proceeding by the carriers and to be agreed upon by the Louisiana & Arkansas and each employee prior to such sale; and if any transferred employee holds an unexpired lease of a dwelling occupied by him as a home, the Louisiana & Arkansas Railway Company shall protect him from loss and cost in securing cancellation of his said lease.

The conditions attached to the Chicago, Rock Island & Gulf lease follow the same general lines as those of the L. & A. case. The commission expressed the belief that

the various companies and their employees should be able to agree upon rules and procedure to make effective the intent of the above-stated conditions.

In his dissenting-in-part opinion in the Chicago, Rock Island & Gulf case Commissioner Mahaffie approved the lease, but said that he was "unable to agree that the affirmative action based on that finding should be deferred pending the acceptance by the applicants of the conditions sought to be imposed by the majority relating to the pay and expenses of the trustees' employees."

"As a commission," he continued, "we exercise authority delegated to us by a statute. Had Congress intended that we have jurisdiction over the compensation and expenses of railroad employees it easily could have so provided. In the absence of such a provision in specific language I do not think it proper that we attempt, by construction, to regulate conditions of employment as an incident to the exercise of power that clearly is conferred on us."

He went on to point out that the commission had called the attention of Congress to its lack of jurisdiction adequately to protect employees from financial loss or other inconvenience as a consequence of authorized railway unifications found to be in the public interest. He also observed that the commission's recommendation in this regard had been with Congress since 1935.

"Other means have been," he said, "and are now being employed by the federal government specifically to deal with conditions of carrier employment. Our jurisdiction has not been changed. Possibly this is due to a belief that such matters as here are attempted to be controlled as a condition of our approval can be handled better by direct negotiations between the parties concerned."

"Conditions imposed beyond our statutory authority are of no effect. If we possessed definite statutory authority to impose, in connection with our approval, such conditions as are here required to be accepted by the trustees before we take final action on this application, there would be no need to defer action. We could at once enter a final order making them effective. If conditions are valid no acceptance is necessary. It may, I think, be assumed that doubt as to our power furnishes the only reason for bargaining with the applicants as to acceptance."

"I do not here consider the conditions in terms," he concluded. "Had we jurisdiction over such matters of social welfare we well might make them more comprehensive. I think it a bad and dangerous policy for a Commission, such as this, to undertake to regulate matters of social welfare without clear statutory authority. Such a policy can lead only to confusion and misunderstanding."

The same reasons were used by Mr. Mahaffie in his dissent in part in the L. & A. case. In another order the commission, through Division 4, modified its consolidation plan so as to assign the Louisiana, Arkansas & Texas to system No. 19-Rock Island-Frisco, instead of to system No. 10-Illinois Central.

Signal Section to Hold 1939 Meeting

The Signal Section of the Association of American Railroads will hold an annual meeting in 1939 on March 13 and 14 at the Stevens Hotel, Chicago.

Union Pacific Opens New Ticket Office

The Union Pacific has moved its city ticket office from 10 South LaSalle street, Chicago, to 1 South LaSalle street, at the corner of Madison and LaSalle streets, and has re-equipped it with modern fixtures.

Stoker Order Again Postponed

The Interstate Commerce Commission has postponed from November 15 to December 15 the effective date of its order in the automatic stoker case, meanwhile denying the application of the railroads for a postponement to January 1, 1939.

Transportation of Explosives and Other Dangerous Articles

The Interstate Commerce Commission, by Commissioner McManamy, has authorized the trial use of a glass-lined, two-unit, fusion-welded tank car for the transportation of water-white, electrolyte-grade (66 deg. Baume) sulphuric acid. The authority, carried in an order amending the order in No. 3666, Special Series A, dated September 4, 1935, does not involve the construction of the car; it merely expands the authorization as to the use of a car already built.

M. P. Would Acquire Texas Truck Routes

The Missouri Pacific Freight Transport Company, affiliate of the Missouri Pacific, has filed with the Interstate Commerce Commission applications for authority to acquire two truck lines operating in Texas. In one application the railroad subsidy seeks permission to buy the 90-mile Freeport-Houston Truck Line, operating between Houston, Tex., and Brazoria; the other is for authority to acquire the A. F. Steele Truck Line, operating between Waco and Marlin, 25 miles.

Wallace Asks Lower Rates on Oranges and Grapefruit

Railroads serving the citrus producing areas of the country have been requested to make temporary emergency reductions in freight rates to encourage the marketing of this season's all-time record crop of oranges and grapefruit, the Department of Agriculture announced on November 1. The request was made by Secretary of Agriculture Henry A. Wallace in a letter addressed to heads of freight tariff associations directing attention "to the seriousness of the situation" in the citrus industry.

Quarterly Reports of Water Carriers and Pipe Lines

The Interstate Commerce Commission has issued orders requiring water carriers and pipe lines subject to the Interstate Commerce Act to render quarterly reports if their annual operating revenues have been more than \$500,000 for the

past three calendar years. The first reports are to be made for the three months ended September 30; they will show for the quarter under review and the corresponding quarter of the previous year data on gross revenues and traffic handled.

Would Give Truck Certificate to D. & R. G. W. Affiliate

Joint Board No. 207, composed of Walter K. Granger of Utah, has recommended in a proposed report that the Interstate Commerce Commission grant a common-carrier trucking certificate to Rio Grande Motor Way, Inc., affiliate of the Denver & Rio Grande Western, for a 32-mile route between Salt Lake City, Utah, and Park City. The report notes that the proposed service will be in competition with the D. & R. G. W. and the Union Pacific, but adds that "the daily service proposed will provide a more flexible and expeditious service than is offered by the railroads."

Spotting Services at Decatur, Ill.

Special Examiner Homer C. King has recommended in a proposed report that the Interstate Commerce Commission find that the Wabash may perform under its line-haul rates spotting services at the Decatur, Ill., plants of the A. E. Staley Manufacturing Company and the Mississippi Valley Structural Steel Company. The examiner based his recommendation on "substantial changes" which have brought the spotting services involved into conformity with the principles announced in the commission's original report in its terminal services investigation—Part II of the general Ex Parte 104 probe of practices affecting operating revenues and expenses.

U. P. Establishes Research Kitchen

A research kitchen for the development of recipes for use in the Union Pacific dining cars, hotels and restaurants, has been established by that company at its commissary in Omaha, Neb. Harry I. Norris, chief traveling chef, will be in charge of the research kitchen, with Mrs. Grace V. Merrill, supervisor of dining service, assisting. The purpose of the research kitchen is to develop popular meals, and at the same time maintain balanced diets. The kitchen will also endeavor to develop such recipes as will eventually increase the use of foodstuffs raised in states served by the Union Pacific. The recipes developed will be made available to the general public in an effort to stimulate trade for producers in the west.

Comptroller General Rules on Pick-Up and Delivery Charge

The Comptroller General of the United States has ruled that a carrier transporting a government shipment under a tariff providing for pick-up and delivery service without additional charge and for an allowance of five cents per 100 lb. to a consignor or consignee performing such service, may not, before determining the applicable land-grant savings, deduct any amount for pick-up and delivery service performed by the carrier. According to the decision, the costs of terminal services

in question are borne by the carrier as an operating expense, and there is no authority for deducting from the charges computed on the through rate any amount for the terminal services.

Photograph—Canadian National Train

In publishing the photograph on page 512 of the October 8 issue of the *Railway Age*, a credit line "Photo by C. F. H. Allen" was inadvertently omitted.

Inspect Enlarged Crane Company Research Laboratories at Chicago

On November 8, 9 and 10, the Division of Engineering and Research of the Crane Company held open house to several hundred scientists, educators, research men, engineers, business executives, and magazine and newspaper editors at the research and testing laboratories of the company at Forty-Second street and South Kedzie avenue, Chicago. The occasion of the event was the completion of an ambitious program of enlargement and extension of the company's laboratory facilities, to the point where they now occupy 86,000 sq. ft. of floor area in 2 buildings and employ a staff of 285. This program of development has been carried forward under the general direction of L. W. Wallace, director of the Engineering and Research division, and formerly director of engineering research of the Association of American Railroads. During the open house celebration visitors were taken on a series of conducted tours through the laboratories and those parts of the company's 90-acre plant in which they were most interested.

"Rocket" Service Extended

The Chicago, Rock Island & Pacific, on November 15, will extend the service of its Kansas City-Oklahoma City "Rocket" to Dallas, Tex., and Ft. Worth. Southbound the train will leave Kansas City at 8 a. m. as at present, and will arrive at Wichita, Kan., at 11:54 a. m. At El Reno, the train will connect with a "Rocket, Jr.," which will operate between El Reno and Oklahoma City, where it will arrive at 3:15 p. m., and also with the westbound "Memphis-Californian." The train will arrive at Ft. Worth at 8:06 p. m. and Dallas at 9 p. m. Northbound it will leave Dallas at 9:30 a. m. and Ft. Worth at 10:20 a. m. The "Rocket, Jr.," connecting at El Reno, will arrive at Oklahoma City at 3 p. m. At El Reno the northbound "Rocket" will also connect with the westbound "Memphis-Californian." The train will arrive at Wichita at 6:42 p. m. and Kansas City at 10:40 p. m., 30 min. earlier than at present. At Kansas City the train will afford connections for St. Paul and Minneapolis, via Des Moines, and for Chicago via Rock Island.

Historical Bulletin Features Profile Study

A detailed "profile" study of a typical locally-sponsored railroad built in the heyday of New England railroad construction, —the Amhurst & Belchertown—features Bulletin No. 47 of the Railway & Locomotive Historical Society. The article

goes into the economic background of the A. & B., with special emphasis upon its relation to local business interests and ambitions. The bulletin also contains an article on the locomotive building firm of Harrison, Winans & Eastwick at St. Petersburg, Russia, giving an account of the building of locomotives on foreign soil by a firm of American manufacturers; a short history of the Lackawanna & Bloomsburg, now a part of the Delaware, Lackawanna & Western; a description of the variety of railway track gages in existence 60 years ago entitled "The Muddle of the Gages;" a short history of the Lehigh & Hudson River, with a complete locomotive roster of the road; a short sketch of the now abandoned Sterling Iron & Railway Company; a further installment of the roster of the locomotives of the New York, New Haven & Hartford and constituent roads; a short history of the Northern New York; and an historic sketch of Dearborn station in Chicago.

Will Bar Advertising on All Privately-Owned Cars

Because the Interstate Commerce Commission is of the opinion that the principles laid down in Use of Privately Owned Refrigerator Cars (201 I. C. C. 323, 382) should be applied to all privately-owned cars used in interstate commerce, Mechanical Interchange Rule 3 (a) (8) will be amended to prohibit, after January 1, 1940, the acceptance in interchange of equipment bearing advertisements of any shipper, consignee or product, according to an announcement made by the General Committee of the Operating-Transportation Division, Association of American Railroads. The attitude of the commission was set forth in a September 19 letter from the acting director of the Bureau of Service.

I. C. C. Modifies Reorganization Plan for L. & N. W.

A modified plan of reorganization for the Louisiana & North West was promulgated by the Interstate Commerce Commission on November 4. The changes in the plan were made because of objections by the court to the original findings of the commission.

The plan first approved by the commission provided for capital liabilities of the reorganized company as follows: Prior lien first mortgage five per cent bonds, due January 1, 1945, \$100,000; general mortgage five per cent bonds, due January 1, 1974, \$517,250, and approximately 142,235 shares of capital stock of \$10 par value, making the total capitalization \$2,039,600. The court, in objecting to the commission's final plan, felt that the apparent value of the property and its prospective earnings justified an issue of \$351,730 of income debentures.

Under the commission's modified plan, the capitalization would consist of: Prior lien first mortgage five per cent bonds, \$100,000; new general mortgage five per cent bonds, due January 1, 1974, \$517,250; income debenture five per cent bonds due January 1, 2008, on which the interest shall not be cumulative, \$351,730, and 132,723

shares of no par value common stock. Under this arrangement, the total capitalization would be \$968,980, plus the 132,723 shares of no par value stock.

Commissioner Mahaffie, concurring in the decision, said that he did so only because a majority of the parties concerned, as well as the court having jurisdiction, appeared to favor the modified plan. He went on to add, however, that "a property such as this should be reorganized without fixed charge obligations."

Correction—Revenues and Expenses

In the table listing the revenues and expenses of railways for September and the nine months of the calendar year, appearing in the *Railway Age* of November 5, page 693, the passenger operating revenues for September of the New York Central should be \$5,118,922.

Contracts of Contract Carriers of Bullion

Contract motor carriers of bullion, currency, jewelry and other precious and very valuable articles are now exempt from the Interstate Commerce Commission's general requirement that all contract carriers execute, preserve and file contracts covering their business. The exemption, according to a notice issued last week by I. C. C. Secretary W. P. Bartel, became effective on October 24 when the commission failed to postpone the unprotected recommended order of Examiner A. S. Parker's proposed report. The recommended order was served on September 14, and, being unprotected, would have become effective within 20 days from that date, except for the commission's action postponing it, first to October 14 and then to October 24. Under the order, the exempt carriers must, however, continue to file schedules of their minimum charges.

Central Offices To Examine Claim Payments

A plan whereby central offices, located in New York, Chicago and Atlanta, Ga., will examine payments for loss and damage to fresh fruits, vegetables and melons in carloads in excess of \$20., to determine whether such payments have been adjusted in accordance with the "Principles and Practices" of the Association of American Railroads governing the adjustment of loss and damage claims, will be placed in effect by the Association on December 1, 1938, for a trial period of one year.

Under the plan, which is intended to govern the prorating of claims among member lines, these offices will be under the jurisdiction of the executive vice chairman of the Freight Claim Division. If the payments are not in accordance with the Association's "Principles and Practices," they will be disapproved and shall not be prorated by the paying carrier with any other carriers, nor shall these carriers participate in any distribution of a disapproved payment. However, when a payment is approved in part, the approved part will be proratable in accordance with prevailing rules. The plan also provides for appeal from the rulings of the executive vice

chairman to the Appeal Committee of the Freight Claim Division.

The plan is similar to that which has been in effect for several years. Under the new plan, claims will be forwarded to one of the central offices whereas in the past special representatives of the Freight Claim Division visited the freight claim offices of the paying carrier to make the examination.

Banker Is Pessimistic on Railroads

"I feel sure there will be little institutional money available for railroad bonds. This may be different if conditions change, but the railroads, if their securities are to be attractive, have to be given more of a chance than they have had in the past." In such manner was the outlook for railroad securities described before the Bank Management Conference at Boston, Mass., on November 4, by Philip A. Benson, president, Dime Savings Bank of Brooklyn, N. Y. The speaker saw a ray of hope, however, in a definite trend toward recovery and increased carloadings. Presenting his formula for renewal of railroad financial standing, he said: "If some great mind, with unlimited power to command, could apply itself to this problem, a useful and efficient railroad machine could be evolved. Waste, inefficiency, duplications could be removed. Rates would reflect the cost of the service, with fair wages to labor and a fair return on the capital invested. I believe shippers could and should pay freight rates that would support an adequate railroad system—one that would fully serve the needs of the nation. But I'm afraid such ideas are but a dream of Utopia. It is not likely to happen."

Wrought Pipe and Fittings in Southwest

Examiner R. G. Taylor has recommended in a proposed report to the Interstate Commerce Commission a reduced basis of rates for all-rail, rail-ocean, rail-ocean-rail and ocean-rail movements of wrought or steel pipe, cast-iron pipe and related articles in straight or mixed carloads to, from and between points in the Southwest. The proposed report is on further hearing in the case which has been in litigation since 1930, when the railroads established rates on the commodities involved in purported compliance with the commission's original decision in No. 13535, Consolidated Southwestern Cases.

Generally speaking, the rates condemned by the examiner are on a basis of 32.5 per cent of first class; his proposed basis would approximate 28.5 per cent of first class. The hearings were held in 1930, 1936 and 1938, and oral argument on Examiner Taylor's report is set for January 5 and 6, 1939.

Railroad Engineers to Get A. S. M. E. Awards

The American Society of Mechanical Engineers has announced the names of those engineers to receive honors and awards on December 6 during the 59th annual meeting of the society in New

York City. Two railroad men are among the group. Lawford H. Fry, railway engineer, Edgewater Steel Company, Pittsburgh, Pa., will receive the Worcester Reed Warner Medal, bestowed for an outstanding contribution to permanent engineering literature, for his "written contributions relating to improved locomotive design and utilization of better materials in railway equipment." A. I. Lipetz, chief consulting engineer in charge of research, American Locomotive Company, Schenectady, N. Y., will be presented with the Melville Medal for 1938 for his paper on "The Air Resistance of Railroad Equipment."

A. A. R. Holds Annual Meeting

The annual meeting of the Association of American Railroads was held in Chicago on November 4 instead of at New York on November 15, as originally contemplated, in order to coincide with a meeting of executives requested by President Roosevelt to consider the emergency committee's report on the wage reduction, and thus eliminate the necessity for two meetings. The major portion of the meeting was devoted to the consideration of the emergency committee's recommendation that the carriers withdraw their demand for a 15 per cent reduction in wages, as reported elsewhere in this issue.

The board of directors re-elected all officers and directors with the exception that H. A. Scandrett, trustee of the Chicago, Milwaukee, St. Paul and Pacific; Daniel Upthegrove, chief executive officer of the St. Louis-Southwestern; and L. R. Powell, Jr., receiver of the Seaboard Air Line, were elected directors to succeed Hale Holden, chairman of the Southern Pacific, L. W. Baldwin, chief executive officer of the Missouri Pacific and L. A. Downs, president of the Illinois Central, respectively.

1937 Reports of Water Carriers Reporting to I. C. C.

The Interstate Commerce Commission's Bureau of Statistics has issued a compilation of selected financial and operating statistics from annual reports of water carriers reporting to the commission for the year ended December 31, 1937. The data, it is pointed out, "do not give a survey of all water-borne commerce in the United States," since the I. C. C. has jurisdiction over common carriers by water only if they are parties to through rail-water rates or railroad affiliates.

In 1937 a total of 95 water carriers filed reports with the commission as compared with 102 in 1936. Of last year's total, 43 were operating along the Atlantic and Gulf coasts, 21 on the Great Lakes, nine on the Mississippi river and its tributaries and 22 along the Pacific coast. All of these groups reported for 1937 total operating revenues of \$102,507,830, an increase of \$2,410,085 over 1936's \$100,097,745. The composite net deficit for 1937 was \$2,082,663 as compared with a 1936 net income of \$1,700,308. The Mississippi river and Pacific coast groups reported net income for 1937; the deficit of the Atlantic and Gulf coast group was \$2,395,206—that of the

Great Lakes group, \$895,201. The latter, however, was an improvement over 1926 when the Great Lakes group lost \$1,047,764.

October Employment 1.43 Per Cent Above September

Railroad employment increased 1.43 per cent—from 961,868 to 975,625—during the one-month period from mid-September to mid-October, although it was down 12.55 per cent from October, 1937, according to the Interstate Commerce Commission's compilation, based on preliminary reports. The index number, based on the 1923-1925 average as 100 and corrected for seasonal variation, stood at 53.1 in October, the highest since March's 53.4. The index number for October, 1937, was 60.8.

Increases over September were reported for all groups, except "executives, officials and staff assistants," which was off 0.25 per cent. The largest increase was in the train and engine service group—up 2.75 per cent from September, but down 13.38 per cent as compared with October, 1937. Employment among yardmasters, switchtenders and hostlers increased 2.1 per cent over September, but was off 11.66 per cent from October, 1937. Maintenance of equipment and stores forces, up 1.94 per cent from September, were down 18.63 per cent from October, 1937; maintenance of way and structures forces were, respectively, up 0.62 per cent and down 9.91 per cent.

Representation of Great Northern Shop Employees

Some Great Northern shop employee groups voted for representation by organizations operating through the Railway Employees Department, American Federation of Labor, while others chose the Associated Organizations of Shop Craft Employees, Great Northern Railway, in recent elections conducted under the auspices of the National Mediation Board.

In one election covering the road generally the A. F. of L. unions were chosen by the machinists, blacksmiths, molders, electrical workers, the apprentices and helpers of the foregoing, and power house employees and shop laborers; Associated won the right to represent the boiler-makers, sheet metal workers, and carmen (including coach cleaners), their apprentices and helpers. In a separate election held among employees of King Street station, Seattle, Wash., the Associated was chosen by the machinists, sheet metal workers (including molders), electrical workers, and carmen (including coach cleaners), and the apprentices and helpers of the foregoing; A. F. of L. unions won among the power house employees and shop laborers, while in the craft of blacksmiths, their apprentices and helpers no certification was made for the reason that no organization or individual received a majority vote.

New York Railroad Club to Hold World's Fair Night November 18

The railroads' part in the forthcoming New York World's Fair of 1939 will be revealed at the next meeting of the New York Railroad Club scheduled for November 18, in the Engineering Societies

building, 29 West 39th street, New York City. J. M. Davis, president, Delaware, Lackawanna & Western, and chairman of the World's Fair Committee of the Eastern Presidents' Conference, will present the introductory remarks, to which Grover A. Whalen, president, World's Fair of 1939, Inc., will respond.

The program is to be presented in three parts. The first part will cover transportation to the fair and within the fair grounds, while the second will concern transportation exhibits at the fair. L. G. Coleman, director, World's Fair Committee, Eastern Presidents' Conference, will describe the general plan of the railroad exhibit; G. A. Blackmore, president, Westinghouse Air Brake Company, and chairman of the Railway Suppliers exhibit committee, will give a talk entitled "Building the Railroads;" Paul Penhume, member of the staff of the railroads' World's Fair Committee, will speak on "Railroads at Work." The third portion of the program will be presented by Edward Hungerford, general director of the pageant to be presented at the fair. His talk is entitled "Railroads on Parade." Stereopticon views of the railroad and railroad supply exhibits will be shown and a model of the railroad exhibit building placed on view in the club rooms.

The club announces that its 66th anniversary dinner will be held on Thursday, December 8, at the Hotel Commodore, New York City. S. F. Pryor, Jr., assistant to president of the American Brake Shoe & Foundry Co., is general chairman of the committee in charge of arrangements.

Water Transport Has Come Back to Stay, says Ashburn

Major-General T. Q. Ashburn, president of the government-owned Inland Waterways Corporation, and L. C. Nelson, director of the Bureau of Regulation, United States Maritime Commission, were speakers at the Federal Transportation Association's "Water Night" meeting which was held in Washington, D. C., on November 9.

Major-General Ashburn sketched the development of water transportation's "come-back" meanwhile defending the activities and accounting methods of the Federal Barge Line, which, along with other water carriers, is fostering the realization of former President Hoover's vision of "a great waterways transportation system in the form of a cross extending from Chicago to New Orleans and from Pittsburgh to Kansas City, with a branch extending from St. Louis to Minneapolis via the Upper Mississippi, which was to be utilized to break down the barriers placed upon the development of the Mississippi Valley by the Panama Canal and blanketed freight rates,—and for the further purpose of restoring industry in the midst of agriculture."

"Water transportation," said the general, has come back to stay, and no amount of juggling of figures regarding cost is going to deter anybody from using the facilities thereon, at a cheaper cost to him than via any other form of transportation." He

would not, however, be too tough on competing agencies—in fact, he said, "let us be fair by imposing upon all forms of transportation a uniform system of regulation, to be controlled by a reorganized Interstate Commerce Commission."

Freight Car Loading

Loading of revenue freight for the week ended October 29, totaled 708,840 cars, an increase of 3,212 cars or five-tenths of one per cent above the preceding week, but a decrease of 59,184 cars or 7.7 per cent below the corresponding week in 1937 and a decrease of 250,652 cars or 26.1 per cent below the same week in 1930. All commodity classifications except live stock, forest products and ore showed increases over the preceding week, while all commodity classifications except live stock and grain showed decreases under last year. The summary, as compiled by the Car Service Division, Association of American Railroads, follows:

Revenue Freight Car Loadings

For Week Ended Saturday, October 29

Districts	1938	1937	1936
Eastern	141,737	156,098	165,878
Allegheny	124,268	138,695	159,004
Pocahontas	53,210	53,284	59,957
Southern	102,544	112,670	114,378
Northwestern ..	100,065	106,291	120,409
Central Western ..	131,262	136,528	130,023
Southwestern ...	55,754	64,458	64,865
Total Western Districts	287,081	307,277	315,297
Total All Roads	708,840	768,024	814,514
Commodities			
Grain and Grain Products	46,906	44,067	33,612
Live Stock	21,053	19,393	21,966
Coal	136,408	151,284	164,598
Coke	6,196	7,916	11,033
Forest Products.	30,023	34,289	36,379
Ore	24,609	30,862	40,567
Merchandise			
L.C.L.	158,880	169,747	170,927
Miscellaneous ...	284,765	310,466	335,432
October 29	708,840	768,024	814,514
October 22	705,628	770,156	816,242
October 15	726,612	806,095	826,525
October 8	702,964	812,258	820,570
October 1	697,938	843,861	819,597
Cumulative			
Total, 43 Weeks	24,898,843	32,302,483	29,737,155

In Canada.—Carloadings for the week ended October 29, totaled 57,874, as compared with 62,030 for the previous week, and 59,689 a year ago, according to the statement of the Dominion Bureau of Statistics.

Total for Canada:	Total Cars Loaded	Total Cars Rec'd from Connections
Oct. 29, 1938	57,874	22,634
Oct. 22, 1938	62,030	22,930
Oct. 15, 1938	56,769	22,057
Oct. 30, 1937	59,689	26,843
Cumulative Totals for Canada:		
Oct. 29, 1938	2,021,894	882,101
Oct. 30, 1937	2,188,594	1,139,357
Oct. 24, 1936	2,024,656	992,770

Club Meetings

The New England Railroad Club will hold its next meeting on Tuesday, November 15, at the Hotel Touraine, Boston, Mass., at which time C. C. Warne, purchasing agent, New York Central, will discuss the subject "Railroad Purchasing." A dinner will precede the meeting. It is to be noted that this date is one week later

than the regular meeting night which chanced to fall on Election day.

The Car Foremen's Association of Chicago will hold its next meeting on November 14 at the LaSalle Hotel, Chicago. Joe Marshall, special representative, Association of American Railroads, Chicago, will present a paper entitled "Loss and Damage Prevention and the Car Man."

The Traffic Club of Philadelphia, Pa., will inaugurate its current forum program on November 16 at the Benjamin Franklin hotel, at which time Professor G. Lloyd Wilson, of the University of Pennsylvania, will discuss the proposed American Institute of Transport.

As background, the speaker will describe the present Institute of Transport in Great Britain.

The Metropolitan Traffic Association of New York, Inc., will begin a series of lectures on the principles of advanced traffic work on November 17, at 6:45 p. m., at the Hotel Imperial, New York City.

The Toronto Railway Club will hold its eighth annual dinner on December 3 at the Royal York Hotel, Toronto, Ont. The guest speakers are Sir Edward Beatty, chairman and president, Canadian Pacific, and William Harty, chairman of the board, Canadian Locomotive Company, Ltd., Kingston, Ont. J. F. Pringle, general superintendent, Canadian National, Toronto, is chairman of the committee in charge of arrangements.

Oral Argument Held in Paducah Gateway Case

Oral argument was held in Washington, D. C., before Examiner W. J. Schutrumpf of the Interstate Commerce Commission on November 4 in the case of the application of the Gulf, Mobile & Northern to abandon operation over the tracks of the Illinois Central between Paducah, Ky., and Bemis, Tenn. The case arose because of the insistence of the operating brotherhoods on the Illinois Central that their members be permitted to operate the trains of the G. M. & N. over the I. C. lines. When the G. M. & N. refused to do this, it ceased to operate over the I. C.'s line and entered into an arrangement with the Mobile & Ohio to interchange its traffic with that road.

At the oral argument, the G. M. & N., speaking through F. M. Hicks, executive vice-president of the road, took the position that it could not enter into such an agreement with the I. C. because it was unwilling to turn over its business to the employees of the I. C. Mr. Hicks went on to point out that his road felt that it would be possible for the employees of the I. C. gradually to drive the traffic of the G. M. & N. away from that line by delaying trains and by other devices. Mr. Hicks also told Examiner Schutrumpf that he considered the contract between the I. C. and the G. M. & N. to be at an end because the I. C. had altered the original terms by forcing the G. M. & N. to use I. C. employees on its freight trains.

E. A. Smith, general attorney for the Illinois Central, expressed the belief that the contract was still in force and that in

view of the fact that the United States District Court had held that the G. M. & N. should use its own engines but should man them with I. C. employees, the G. M. & N. was still obligated to use their tracks. He also asked for a dismissal of the case, pointing out that this abandonment was already an accomplished fact. He went on to say that the commission had taken the position that where an abandonment was an accomplished fact, it would not issue a certificate of authorization. Examiner Schutrumpf took this motion under advisement.

New York Voters O. K. Crossing Removal Amendment

New York voters did their bit on Election Day for over-burdened railroads in their state when they passed amendment No. 3 to the state constitution by a substantial majority. The amendment relieves the carriers of payment of the 50 per cent of the cost of all crossing removal projects ordered by the state now levied upon them and substitutes the provision that the roads are to be liable to the amount of the net benefit to them from the elimination and incidental improvements up to a maximum of 15 per cent of the total cost of removal projects. The amendment further provides that the state should pay the entire cost of elimination projects "in the first instance," but will be entitled to recover from the railroads involved the amount of net benefit to them, the amount to be adjudicated after completion of the work in a manner to be prescribed by the legislature at a later date. The provisions are to apply to any grade crossing elimination for which construction work was not started before January 1, 1939.

Twice amended before reaching its present form, the crossing amendment was passed unanimously by the 162 voting members of the state Constitutional Convention on July 18. Some time ago, executives of individual trunk line railroads and the Associated Railroads of New York State pledged support by the carriers to plans for elimination of existing dangerous grade crossings, provided the state fulfills its financial obligations as stipulated by amendment No. 3. Legal and economic background of the amendment was discussed in the *Railway Age* for October 22, page 589.

G. G. Thomas Honored by North Carolina Engineers

Acting on a recommendation of its Committee on Engineering Award, the North Carolina Society of Engineers recently awarded a diploma to George G. Thomas, engineer metal structures, Atlantic Coast Line, for ingenuity exhibited in the strengthening of 38 steel bridges. The recommendation of the Committee on Engineering Award reads in part as follows: "Your committee commends the ingenuity exhibited by Mr. George G. Thomas, of Wilmington, N. C., a member of this society and of the American Society of Civil Engineers, in his work, completed in May, 1938, in strengthening for

further service of thirty-eight steel bridges on the Atlantic Coast Line (principally in North Carolina), whereby these bridges, originally designed for Coopers E-40 live load, are made to conform, after thirty years' service, to the requirements of Coopers E-60 live load, thereby preserving the original capital investment in the E-40 bridges and thereby saving the cash of the railroad company in the sum of about \$50,000.

"Your committee recommends the award of a diploma to Mr. George G. Thomas for ingenuity in the design and efficiency of the construction by forces reporting to him in reserving of bridges long used so these bridges may serve for a half-century or more to come under greatly increased live loads."

Mr. Thomas has been connected with the Atlantic Coast Line for more than 31 years, having entered the service of this company on January 14, 1907, as a draftsman in the motive power department. Two years later he entered the chief engineer's office and in 1911, he became a draftsman in the bridge engineer's office. During 1917, Mr. Thomas served as resident engineer on second track construction and yard extension work at Florence, S. C., returning to the chief engineer's office in 1918. In the following year he became office engineer and from 1920 to 1928, he served as bridge engineer. Since the latter year he has held the position of engineer of metal structures.

I. C. C. to Study Extent of Power Over Motor Carrier Employees

Giving as one reason for its action "the existing confusion among motor carriers and their employees due to the recent enactment of the Fair Labor Standards Act," the Interstate Commerce Commission has instituted a proceeding, docketed as Ex Parte No. MC 28, to determine the extent of its jurisdiction over the hours of service of employees, other than drivers, of motor carriers, including private carriers. A notice accompanying the commission's order says that, since the question is primarily one of law and not of fact, no public hearing will be held at this time, but the commission will receive briefs from interested parties on or before December 10 and will hear oral argument at Washington, D. C., on December 16.

Meanwhile, however, the order sets forth that in the event it be determined by the commission that its jurisdiction is limited to prescribing requirements with respect only to those employees, other than drivers, whose activities affect the safety of operation of motor vehicles, then the proceeding will be assigned for hearing "for the sole purpose of determining such class or classes of employees."

The I. C. C. notice quotes section 13(b) of the wage and hour law, which exempts from its maximum hours provisions employees of employers subject to Part I of the Interstate Commerce Act and those with respect to whom the commission has power to establish qualifications and maximum hours of service under the Motor Carrier Act. Also cited are pertinent sections of the latter relating to Interstate

Commerce Commission jurisdiction over hours of service of common, contract and private motor carriers.

The notice also reveals that the administrator of the Wage and Hour division of the Department of Labor, who is charged with the administration of the wage and hour law, will be invited to consider the briefs filed, to attend the argument and, if he wishes, to participate in the proceeding.

As noted in last week's issue, the I. C. C. has scheduled for next January and February nine public hearings in connection with its investigation instituted some time ago to establish for interstate private truckers reasonable requirements with respect to qualifications of employees and safety of operation and equipment—"if need therefor be found." Also, the commission held further hearing at Chicago last week on the recently-reopened common and contract carrier hours-of-service case.

U. S. Supreme Court Cases

Several cases of interest to the railroads were acted upon by the United States Supreme Court on November 7. In one case of the United States, et al. v. Maher, the Court noted probable jurisdiction, and will, therefore, review an order of the United States District Court for the District of Oregon, which suspended the denial of a certificate by the Interstate Commerce Commission under the "grandfather" clause of the Motor Carrier Act, 1935, wherein the applicant applied for authority to operate as a common carrier by motor vehicle of passengers in interstate commerce between fixed termini, although he had previously performed anywhere-for-hire services over the same highway. The

U. S. District Court held that the change to service between fixed termini on regular schedule did not destroy the applicant's continuity of operation, and, therefore, did not destroy his rights to a certificate under the grandfather clause.

In another case of the Great Northern v. Leonidas, the court held that a railroad sued by an employee under the Employers' Liability Act has available the defense of assumption of risk. The Supreme Court of Montana, which had passed on the case, seems to have held that the Employers' Liability Act is itself a statute "enacted for the safety of employees" and the assumption of risk defense is not available in cases arising under it. The Supreme Court of the United States held that a statute "enacted for the safety of employees" relates to Safety Appliance Acts and others of that character.

The Court, however, affirmed the judgment against the Great Northern on the ground that the question of assumption of risk was for the jury and that the jury had found against the railroad on this issue on evidence sufficient to warrant submission of the case to the jury. Mr. Justice Black, in a separate opinion, said he thought that the case should have been affirmed on all grounds.

The court also granted a review of the case of the Guaranty Trust Company of New York v. Henwood, in which bondholders of the St. Louis Southwestern had contended that their bonds calling for payment in gold could be collected in other currencies where the exchange for gold is still available. The bond of the St. Louis Southwestern promised to pay "One Thousand Dollars in gold coin of the United States of America, of or equal to the standard of weight and fineness as it

existed January 1, 1912," or a specified amount in pounds in London, "or" a specified amount in guilders in Amsterdam "or" a specified amount in marks in Berlin "or" a specified amount in francs in Paris. The bondholders now contend that they should be paid in Dutch guilders which are convertible into gold. The Eighth Circuit Court of Appeals had held that the Congressional resolution holding the gold clause unenforceable also applied to payment in foreign currencies, thus obsoleting the Cotton Belt from paying off the bondholders in foreign currencies. The Second Circuit Court of Appeals has taken the opposite view, and it is now up to the Supreme Court of the United States to define the law on the issue.

Streamliners Make Money, Says Report

(Continued from page 717)

the report "prove conclusively that the new trains have induced a large number of persons to travel by rail who would not otherwise have done so."

The report pointed particularly to the growth of traffic on the Santa Fe's "Super Chief." The first new lightweight "Super Chief" was placed in service between Chicago and Los Angeles in May, 1937. In February, 1938, a second train was added to provide twice-a-week service. Revenue for the period January 1 to June 30, 1937, was \$238,581; from July 1 to December 31, 1937, it grew to \$306,286, and for January 1 to June 30, 1938, to \$488,072.

The first so-called "streamliners" went into service in 1934, with the inauguration of the "City of Salina" by the Union Pacific and the pioneer "Zephyr" by the Bur-

* * * *



Chesapeake & Ohio 50-Ton 40-Ft. Box Car Built by the General American Transportation Corporation

lington. Both were three-car trains; the "City of Salina" was constructed of aluminum alloy by the Pullman-Standard Car Manufacturing Company, while the pioneer "Zephyr" was built of stainless steel by the Budd Company.

Equipment and Supplies

LOCOMOTIVES

THE COLUMBUS & GREENVILLE is inquiring for about five locomotives of the 2-8-2 type.

THE SOROCABANA RAILWAY, Brazil, has ordered four meter-gage, three-cylinder locomotives, of the 4-10-2 type, from the American Locomotive Company. Mario Salles Souto is director, Sao Paulo, Brazil.

READING-CENTRAL OF NEW JERSEY.—E. W. Scheer, president of the Reading and Central of New Jersey has announced that the directors of the roads have authorized the purchase of 15 Diesel-electric locomotives for use on both lines; bids for this equipment have been received, but awards of contracts have not yet been made.

THE WHITE PASS & YUKON ROUTE has placed an order with the Baldwin Locomotive Works for one 2-8-2 type locomotive, having a total engine weight of about 72½ tons; cylinders 17 in. by 22 in., and driving wheels 44 in. in diameter. The locomotive is practically duplicate of one delivered to this road by Baldwin early in the year.

PASSENGER CARS

THE SEABOARD AIR LINE has ordered a seven car streamlined, stainless steel, all chair car train, with a dining car, from the Edward G. Budd Manufacturing Company. A Diesel-electric locomotive for the train has been ordered from the Electro-Motive Corporation. It will be equipped with two 1,000-hp. General Motors Diesel engines.

IRON AND STEEL

THE CHICAGO GREAT WESTERN is inquiring for 150 tons of structural steel for grade crossing separation work at Lombard, Ill.

SIGNALING

NEW YORK CENTRAL SYSTEM.—Sealed proposals will be received at the office of the purchasing agent, New York Central System, New York, until 10:00 a. m. (e.s.t.), November 22, for the furnishing of signal material to be used in connection with highway grade crossing protection at crossings on the Cleveland, Cincinnati, Chicago & St. Louis, in the State of Illinois. Further information may be obtained from the assistant signal engineer of this road at Cincinnati, Ohio.

Supply Trade

Wilder A. Chapman, formerly secretary of Skinner and Sherman, Inc., Boston, Mass., has been appointed manager of laboratories for Robert W. Hunt Company, Chicago.

L. F. Kinderman, formerly associated with the Republic Steel Corporation and the Westinghouse Electric & Manufacturing Company, has been appointed district sales representative for the Cleveland-Pittsburgh territory of Iron & Steel Products, Inc., Chicago, with headquarters in Warren, Ohio.

George W. Wolf, operations manager of the General Motors Overseas Operations, has been appointed president of the United States Steel Products Company, the export subsidiary of the United States Steel Corporation of Delaware. Mr. Wolf's headquarters will be at New York effective January 1, 1939; he will succeed George C. Scott, who is retiring from active service but will remain with the Products Company in an advisory capacity.

The Gustin-Bacon Manufacturing Co., Kansas City, Mo., which, since 1931, has been interested in the development, manufacture and marketing in the railway field of fiber-glass insulation, will continue as the exclusive distributors in the railway field of Fiberglas insulation and certain other products which will be manufactured by the Owens-Corning Fiberglas Corporation, as announced in the *Railway Age* of November 5. The Gustin-Bacon Manufacturing Company has been affiliated with the Owens-Illinois Glass Company, one of the two companies participating in the organization of the new Owens-Corning Fiberglas Corporation, since 1935 when it sold the assets of its insulation division to the Owens-Illinois Glass Company and became the railway distributor for the latter.

OBITUARY

George T. Cooke, president of the American Railway Products Company, Darien, Conn., died suddenly at Norwalk hospital on November 8, at the age of 55. Mr. Cooke was also for many years chairman of the finance committee of the New York Railroad Club.

SIX STRIKES, INVOLVING 1,095 EMPLOYEES OF STEAM RAILROADS, were begun during 1937, according to a study issued recently by the Bureau of Labor Statistics of the United States Department of Labor, entitled "Analysis of Strikes in 1937." These six strikes, the report goes on to say, involved the loss of 26,395 man-days. A table listing employees' unions involved in strikes ending in 1937 shows that the railroad brotherhoods were concerned in four strikes, involving 1,654 workers.

Construction

Additional P. W. A. Projects

President Roosevelt has approved a list of non-federal P. W. A. projects including the following:

PITTSBURGH, PA.—Plans propose the construction of two elevated roadways with ramps leading therefrom, two paved wharves and the reconstruction of two existing streets at Pittsburgh, including appurtenant work and alterations to the Pennsylvania railroad viaduct, at an estimated cost of \$5,234,471, for which a grant of \$2,355,512 has been made.

JEANNETTE, PA.—Plans provide for an underpass under the Pennsylvania railroad tracks at Jeannette, and the construction of a highway connecting Magee avenue to Gaskill avenue, including the acquisition of necessary land. The estimated cost of this project is \$255,259, for which a grant of \$114,867 has been made.

AUSTIN, MINN.—Plans provide for the construction of an overhead pedestrian bridge at Austin, consisting of steel superstructure on concrete pedestals from the corner of Elm street and Brownsdale avenue to Brown street, thence to Tolleson street and over the rights-of-way of the Chicago, Milwaukee, St. Paul & Pacific and the Chicago Great Western. The estimated cost of this work is \$15,360, for which a grant of \$6,912 has been made.

STATE OF CONNECTICUT.—Plans proposed call for the construction and improvement of 17 sections of road, totaling approximately 33½ miles long in various counties of the state to include grading, surfacing, drainage structures, bridges; also grade separation and appurtenant work to eliminate dangerous conditions. The estimated total cost is \$3,965,000 and a grant estimated at \$1,784,250 (about 45 per cent) has been made.

DENVER, COLO.—Construction of a roadway, three bridges, four underpasses, two dual approaches to two viaducts, alterations to five viaducts and rerouting railroads, including acquisition of land and rights-of-way at Denver; the present plans propose the construction of an arterial highway. The estimated cost is \$1,566,452, for which a grant of \$704,903 has been made.

KANSAS CITY, MO.—Plans propose the construction of a main viaduct at 15th street, over railroad tracks and Blue river, 2,630 ft. long and an approach viaduct on Manchester street, 1,350 ft. long. This work will eliminate three grade crossings and remove heavy traffic from the industrial district. The estimated cost is \$1,500,000, for which a grant of \$675,000 has been made.

CAMBRIDGE, MASS.—Present plans propose reconstruction and repair of nine bridges, including the Huron Avenue bridge over the Boston & Maine at an estimated cost of \$215,000, for which a grant of \$96,750 has been made.

JOHNSTOWN, PA.—Present plans propose to recondition the viaduct in the 13th ward over the Pennsylvania railroad tracks, at

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Here is a "behind-the-scenes" view of the Lima bull-riveter. » » »
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LIMA LOCOMOTIVE WORKS, INCORPORATED, LIMA, OHIO

an estimated cost of \$73,251, for which a grant of \$32,963 has been made.

PORTLAND, ORE.—Present plans propose improving and repairing piers 1, 2 and 5 of Municipal Terminal No. 4 and relaying 1,070 ft. of track at an estimated cost of \$151,700, for which a grant of \$68,265 has been made.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—A contract amounting to \$40,503 has been awarded the Chicago Grading Company, Chicago, for the construction of an I-beam overhead railroad and highway grade separation project of U. S. route No. 102, which will cross over two tracks of this railroad and over Irving Park Road west of Bensenville, Ill. The contract for the fabrication of the steel for this work amounting to \$13,249, has been awarded the Lakeside Bridge and Steel Company, Milwaukee, Wis.

CHICAGO, ROCK ISLAND & PACIFIC.—A contract has been awarded the Kansas City Bridge Company, Kansas City, Mo., for the construction of the foundations and substructure of the new Cimarron River bridge of this company between Kismet, Kan., and Hayne, on the new "Arkalon" cut-off. The substructure will consist of four reinforced concrete piers extending 150 ft. below the base of rail, which will rest on foundations of the pneumatic caisson type, and two abutments of reinforced concrete construction supported by steel piling.

LEVISA RIVER.—The Interstate Commerce Commission, Division 4, has extended from December 31, 1938, to December 31, 1940, the time within which this company may complete the construction of an extension of its railroad in Pike County, Ky.

READING.—The Pennsylvania State Highway Department has awarded contracts to H. R. Dickens, Philadelphia, Pa., for the elimination of grade crossing at Mt. Airy avenue, Route 67015, Philadelphia, to cost about \$128,973, and to the McNichol Paving & Construction Company, Philadelphia, for the elimination of grade crossings at Allegheny avenue, 21st street and 22nd street, Route 67042, Philadelphia, to cost about \$414,056.

Financial

BOSTON & MAINE.—*Abandonment.*—The Interstate Commerce Commission, Division 4, has authorized this company to abandon a line extending from Keene, N. H., to a point about two miles west of Elmwood station in the town of Hancock, 23 miles.

CHESAPEAKE & OHIO.—*Dissolution of Chesapeake Corporation.*—Details of a plan for dissolution of the Chesapeake Corporation, intermediate holding company through which the Alleghany Corporation controls substantial holdings in the Chesapeake & Ohio, the Erie and the Pere Marquette, have been made public by its board of directors. An important provision of the plan is that the directors have determined, subject to their own discretion, that they will not vote the controlling stock of the Chesapeake & Ohio held by the Chesapeake Corporation during the process of liquidation.

The plan calls for a reduction of Chesapeake capital stock from \$74,242,040 to \$179,974, or an amount equal to ten cents a share for stock outstanding, pending complete liquidation. Following the reduction in capital, the directors shall from time to time make distributions of assets to stockholders, either in cash or in kind, by way of liquidation, and it is contemplated that a substantial initial distribution of holdings of Chesapeake & Ohio common stock will be made promptly upon the approval of the plan at the stockholders' meeting. It is expected, however, that complete liquidation of the corporation will extend over a considerable period of time, but in no event beyond December 31, 1941.

The 69,000 shares of common stock of the Erie which the corporation holds will be auctioned off on November 29 in lots of 100 and in entirety. The Erie stock, carried on the balance sheet at a cost of \$2,245,112, had an indicated value, as of October 31, of \$172,500, based upon the closing bid on the New York Stock Exchange on that date. Principal holdings of the corporation are 2,359,480 shares of Chesapeake & Ohio common stock referred

to above, which are carried on the balance sheet at a cost of \$83,543,741 and had an indicated value, as of October 31, of \$81,402,060, based upon the closing bid on the New York Stock Exchange. The corporation also holds 27,500 shares of common stock of the Pere Marquette, carried on the balance sheet at \$4,783,959, which had an indicated value, as of October 31, of \$419,375.

A special stockholders' meeting for consideration of the plan has been called for November 28 in Baltimore, Md.

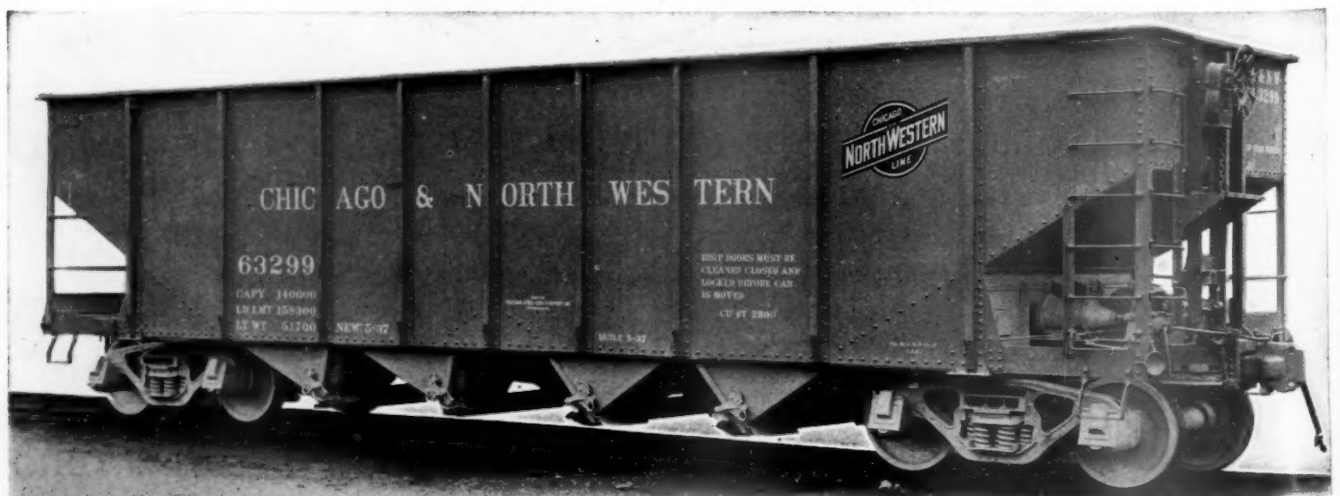
CHICAGO & NORTH WESTERN.—*Abandonment.*—The trustee has asked the Interstate Commerce Commission for authority to abandon the line extending from Fulton, Ill., to Bluffs, 4.4 miles.

CHICAGO & NORTH WESTERN.—*Abandonment.*—Examiner W. J. Schutrumpf of the Interstate Commerce Commission, in a proposed report to the commission, has recommended that it authorize the trustee to abandon a line extending from Bain, Wis., to Harvard, Ill., 39.4 miles.

CHICAGO, BURLINGTON & QUINCY.—*Quincy, Omaha & Kansas City Abandonment.*—These two roads have filed with the Interstate Commerce Commission a joint application superseding the Q. O. & K. C.'s previous petition for authority to abandon its entire 249-mile line and setting forth a plan whereby the 144-mile section between Milan, Mo. and Kansas City, would be abandoned while the Burlington takes over the Milan-Quincy, Ill., segment for operation as a branch line. The application, which contemplates dissolution of the Q. O. & K. C., was framed "to carry into effect a comprehensive and interdependent plan for preserving to the public, for the present at least, certain railroad services and facilities which otherwise cannot be maintained without imposing a burden upon interstate commerce and upon the applicants." The reasons behind the Q. O. & K. C. original application for authority to abandon its entire line were set forth in the *Railway Age* of May 28, page 909.

CHICAGO & NORTH WESTERN-CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—*Merger Plan Protested.*—Life Insurance Group

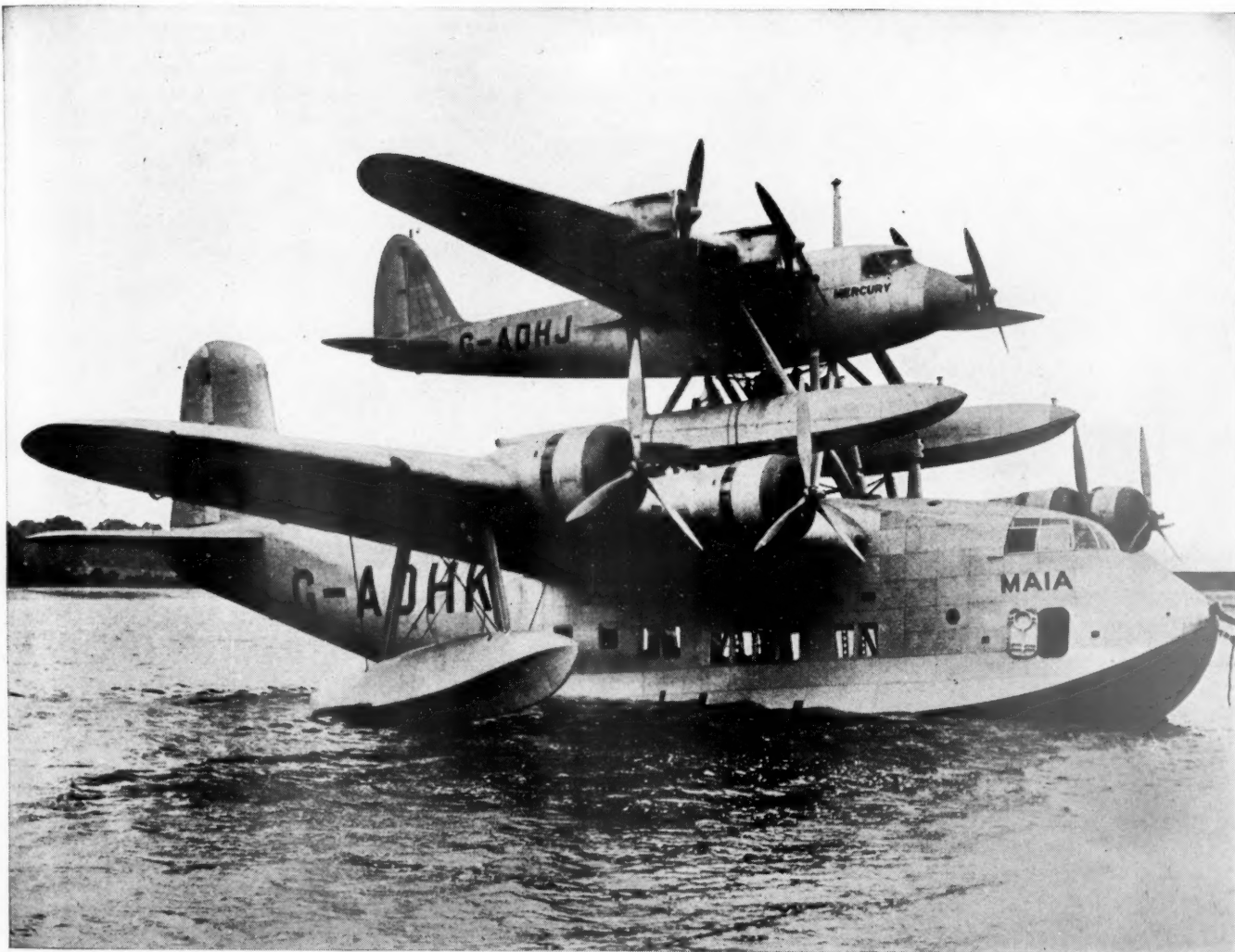
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Chicago & North Western 70-Ton Hopper Car With a Light Weight of 51,700 Lb. Built by the Pressed Steel Car Company

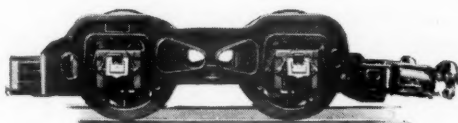
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committees representing holders of securities of these roads have filed with the Interstate Commerce Commission answers to the petitions of protective committees of the preferred stockholders of the Milwaukee and the common stockholders of the North Western, proposing a plan for merging the two roads. The answers to this merger proposal, which was outlined in the *Railway Age* of November 5, page 664, assert that on the basis of the record that the Milwaukee preferred and the North Western common has "no value" the petitioners have "no standing in law to make the proposal." Previously the answers had stated that any consolidation of properties of such magnitude would involve a "tremendous amount of effort, money and time;" and that the objective could not more easily be accomplished under the bankruptcy act than after reorganization—thus, "further delay in lifting the properties out of bankruptcy would react to the detriment of creditors, without compensating benefits to the public or the present stockholders."

CHICAGO, ROCK ISLAND & PACIFIC.—Abandonment.—The Interstate Commerce Commission, Division 4, has authorized the trustees to abandon part of a branch line extending from Ruskin, Nebr., to Nelson, 12 miles.

CHICAGO, ROCK ISLAND & PACIFIC.—Lease of the Chicago, Rock Island & Gulf.—As noted elsewhere in this issue, the Interstate Commerce Commission, Division 4, has authorized the trustees to lease the property of the Chicago, Rock Island & Gulf, subject to certain conditions which deal with the disposition of those employees to be displaced by the consolidation.

CHICAGO, ROCK ISLAND & PACIFIC.—Acquisition, Abandonment and Trackage Rights.—Trustees of this road have applied to the Interstate Commerce Commission for authority to acquire the 23.9-mile segment of the Clinton, Davenport & Muscatine (an electric line) between Davenport, Iowa, and Shaffton; and to abandon segments of their own line between Bennett and Shaffton Junction, 35.1 miles, and between Tipton and Elmira, 15.6 miles. In order to reach the acquired line in Davenport the proposal contemplates also that the Rock Island would be authorized to execute trackage-rights agreements for operations over one-half mile of Chicago, Milwaukee, St. Paul & Pacific tracks and one mile of Davenport, Iowa & Northwestern tracks; at Shaffton a connecting track would be built. The application points out that the plan would enable the Rock Island to serve the territory involved with a reduction of about 39 miles in operated mileage.

LOUISIANA & ARKANSAS.—Merger with the Louisiana, Arkansas & Texas.—As noted elsewhere in this issue, the Interstate Commerce Commission, Division 4, has authorized this company to acquire control of the Louisiana, Arkansas & Texas by acceptance of the latter's capital stock, and to merge the two properties into the Louisiana & Arkansas, for ownership, man-

agement and operation. The commission has also authorized this company to procure the authentication and delivery of \$850,000 of first mortgage five per cent bonds, series C, in connection with the merger, the bonds to be held in the treasury subject to further order of the commission. The formal order was withheld subject to certain conditions which were attached, dealing with the disposition of those employees displaced by the merger.

LOUISVILLE & NASHVILLE.—Abandonment.—The Interstate Commerce Commission, Division 4, has authorized this company to abandon its branch line extending from Russellville, Ky., southerly to Adairville, 12 miles.

NEW YORK, NEW HAVEN & HARTFORD.—Transit Subsidiary Reorganization.—Judge Hincks of the U. S. District Court at New Haven, Conn., has allowed the trustees of this road to accept a plan for reorganization of the Connecticut Company, wholly-owned transit subsidiary, filed last month and reviewed in the *Railway Age* for October 15, page 571.

ST. LOUIS-SOUTHWESTERN.—Bond Interest.—The question of validity of annual interest payments totaling \$800,000 on a \$20,000,000 St. Louis-Southwestern bond issue, was taken under advisement by the United States Circuit Court of Appeals at St. Louis, Mo., on November 4. The hearing on November 4 was on appeal of the trustees under another mortgage of the Cotton Belt and a committee for bondholders under that mortgage, from district court orders last summer authorizing the trustee to pay the interest on the first mortgage bonds. Their counsel argued that payment of first mortgage bond interest was improper because of a clause in the mortgage purporting to secure guaranty of payment of first mortgage bonds of the subsidiary. The railroad and holders of the first mortgage bonds contend that the issues raised on the appeal had been decided two years ago and that if the district court should be reversed all Cotton Belt mortgages would be in default and a costly segregation of earnings would become necessary.

SOUTHERN.—Purchase of Equipment Trust Certificates by RFC.—This company has asked the Reconstruction Finance Corporation to purchase at not less than par \$6,000,000 of its four per cent equipment trust certificates, maturing in 15 years with period payments to start at the end of two years from the date of issue, and 14 equal annual payments to retire the remainder. The proceeds will be used to finance the purchase of 2,400 all steel freight cars and 25 70-ft. all steel express cars. The company has also asked the Interstate Commerce Commission for its approval of the transaction.

Average Prices of Stocks and Bonds

	Nov. 8	Last week	Last year
Average price of 20 representative railway stocks..	33.17	31.73	32.87
Average price of 20 representative railway bonds..	62.31	61.32	67.56

Railway Officers

EXECUTIVE

W. C. Shelver, chief dispatcher on the Union Pacific at Green River, Wyo., has been promoted to assistant to vice-president of operations, with headquarters at Omaha, Neb., with supervision over safety matters, succeeding **Sidney H. Osborne**, who retired on November 1.

Mr. Shelver entered railway service in August, 1889, as an operator and agent



W. C. Shelver

on the Minneapolis, St. Paul & Sault Ste. Marie, and in August, 1898, he went with the Northern Pacific as an operator, later becoming a clerk, dispatcher and chief dispatcher. In May, 1912, he went with the Denver & Rio Grande Western as a dispatcher, and in August of that year went with the Union Pacific as a dispatcher at Omaha. In 1916, he was promoted to trainmaster of the Wyoming division, and from 1918 to 1922, served as trainmaster of the Nebraska division. In 1922, he was advanced to assistant superintendent of the Western division, and two years later was transferred to the Nebraska division. He subsequently served as safety agent of the Colorado division, and transportation inspector at Omaha.

Mr. Osborne entered railway service in April, 1900, with the Oregon Short Line (part of the Union Pacific system), and was advanced through various positions in the engineering department to that of assistant engineer in charge of branch line construction in 1909. In 1913, he was promoted to division engineer of the Idaho division. In December, 1914, he left railway work, but re-entered the service of the Union Pacific in February, 1917, as an assistant engineer in the office of the engineer maintenance of way at Omaha. In December of the same year, he was appointed division engineer of the Kansas division, and later served successively in the same capacity on the Nebraska, Los Angeles, and Colorado divisions. On February 15, 1927, Mr. Osborne was appointed

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NO. 72 OF A SERIES OF FAMOUS ARCHES OF THE WORLD



HERBEAUMONT VIADUCT

BELGIUM

The Herbeaumont Viaduct, one of the most graceful viaducts in Belgium, crosses the River Semois on the Beatrix-Muno main line of the Belgium National Railways. Constructed of brick, its seven arches of 18 metres span each, carry the tracks above the river at a height of 35 metres.

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engineer maintenance of way at Omaha, and when this office was discontinued in 1931, returned to the Colorado division as division engineer. In April, 1935, he was promoted to assistant to the executive vice-president of the system, in charge of safety, with headquarters at Omaha.

FINANCIAL, LEGAL AND ACCOUNTING

C. H. O'Hearn, auditor of passenger accounts of the Chicago, St. Paul, Minneapolis & Omaha, has been appointed auditor of disbursements, succeeding **E. E. Rusch**, whose promotion to general auditor of the Omaha was announced in the *Railway Age* of November 5, and **J. P. Holly**, auditor of freight accounts, has been appointed auditor of revenues, a newly created position.

Thomas J. Lawless, general attorney on the Chicago, Burlington & Quincy, with headquarters at Chicago, has been promoted to assistant general counsel with the same headquarters, a newly created position, and **Walter McFarland**, general attorney, with headquarters at Chicago, has been advanced to general solicitor, with the same headquarters, succeeding **James C. James**, whose promotion to general counsel was announced in the *Railway Age* of November 5. **Eldon M. Martin**, assistant general attorney at Chicago, has been promoted to general attorney, and **Andrew C. Scott**, assistant general attorney at Chicago, has been appointed assistant to general solicitor at that point.

F. M. Seiberlich, whose promotion to freight claim agent of the Minneapolis, St. Paul & Sault Ste. Marie, was announced in the *Railway Age* of November 5, was born at Shakopee, Minn., on February 7, 1889, and entered railway service on October 20, 1904, as an apprentice telegrapher on the Chicago, St. Paul, Minneapolis & Omaha at Shakopee. On July 1, 1906, he went with the Minnesota Transfer at St. Paul, Minn., as a claims investigator, and



F. M. Seiberlich

on June 1, 1911, he went with the Soo line in the same capacity. On December 17, 1917, he was promoted to chief investigator, and on July 1, 1927, he was advanced to assistant freight claims agent.

OPERATING

W. G. Doherty, assistant superintendent of the Cornwall subdivision of the Canadian National, at Montreal, Que., has been transferred in the same capacity to the Ottawa division at Ottawa, Ont., succeeding **R. A. McQuade**, who has been transferred to the Cornwall subdivision, at Montreal, to succeed Mr. Doherty.

W. E. Rivers, division engineer and acting assistant superintendent on the Canadian National, with headquarters at Prince Albert, Sask., has been promoted to assistant superintendent with jurisdiction over the Tisdale, Chelan, Brooksby, St. Brieux, Maskanaw, Arborfield and Chudworth subdivisions.

J. B. Phelan, whose appointment as superintendent of car service of the Pennsylvania at Philadelphia, Pa., was noted in the *Railway Age* of November 5, was born in Moberly, Mo., in 1884. Mr. Phelan was graduated from the University of Missouri, with a degree in civil engineer-



J. B. Phelan

ing, and entered the service of the Pennsylvania as a rodman on the Middle division in 1907. After varied experience he became superintendent of the Schuylkill division in 1923 and of the Conemaugh division in 1926. He was appointed superintendent of freight transportation, Eastern region, later in the same year. Mr. Phelan became superintendent of the Philadelphia division in 1927 and of the Middle division in 1931, being appointed assistant superintendent of car service on May 1, 1936, the position he held at the time of his recent appointment.

Charles L. Franklin, whose promotion to superintendent of the Chicago terminal division of the Chicago, Rock Island & Pacific, with headquarters at Chicago, was announced in the *Railway Age* of November 5, was born at Alpena, Mich., on March 7, 1889, and attended business college at Ottawa, Ont., in 1905 and 1906. He entered railway service in 1908 as a brakeman on the Grand Trunk Pacific at Melville, Sask., and in 1911, he was promoted to conductor. He resigned in March, 1912, and the following month entered the service of the Union Pacific as a brakeman at Grand Island, Neb., later becoming a

switchman and an engine foreman. In November, 1916, he left the Union Pacific to go with the Chicago, Burlington &



Charles L. Franklin

Quincy as a switchman at Ravenna, Neb., and in 1917, he was advanced to yardmaster at Edgemont, S. D. He resigned from the service of the Burlington in 1923, and the following year went with the Colorado Southern as a switchman at Denver, Colo. In 1925, he returned to the Burlington as a switchman at Denver, and in 1926 he was again promoted to yardmaster on the Burlington, this time at Centralia, Ill. He was advanced to trainmaster, with headquarters at Centralia in 1932, and in April, 1937, he left the Burlington to go with the Rock Island as trainmaster with headquarters at Cedar Rapids, Iowa. Mr. Franklin was transferred to El Reno, Okla., in October, 1937, and was located at that point at the time of his recent promotion.

TRAFFIC

James W. Lee, foreign freight traffic manager of the St. Louis-San Francisco, with headquarters at New York, has been transferred to St. Louis, Mo.

S. I. Thompson, chief clerk, coal traffic department, Baltimore & Ohio, has been appointed coal freight agent, with headquarters as before at Baltimore, Md., with duties assigned to rates and divisions.

Guy Thomas Pettigrew, assistant general freight traffic manager of the Canadian National, with headquarters at Montreal, Que., has retired after more than 50 years of service. Mr. Pettigrew was born at Sorel, P. Q., on March 6, 1874, and entered railway service on May 1, 1888, as an apprentice in the traffic department of the Grand Trunk. In 1892 he was appointed clerk and three years later became chief clerk. He was appointed division freight agent at Stratford, Ont., in July, 1907, remaining there until November, 1911, when he was transferred to Montreal in the same capacity. Following amalgamation of the companies which now form the Canadian National, Mr. Pettigrew was promoted to freight traffic representative of the system, at New York, later returning to Montreal as tariff inspector. In 1925 he became district freight agent at Montreal and on February 1, 1928, he became general

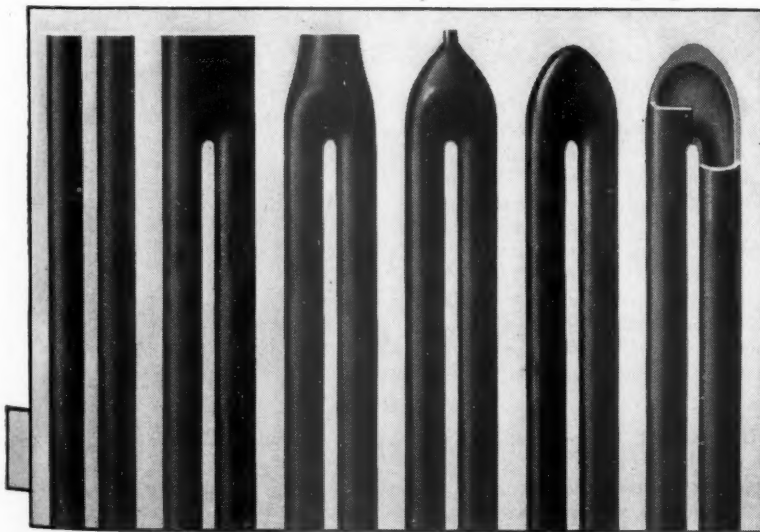
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freight agent, Grand Trunk-Canadian National, with headquarters at Detroit, Mich. He was appointed assistant general freight



Guy Thomas Pettigrew

traffic manager at Montreal on January 1, 1930, the position he held until his retirement.

ENGINEERING AND SIGNALING

John W. Wheeler, engineer highway negotiations of the Chicago, Burlington & Quincy, with headquarters at Chicago, has been appointed assistant chief engineer of the Burlington Lines including the Chicago, Burlington & Quincy, the Colorado & Southern, the Fort Worth & Denver City and the Wichita Valley. The position of engineer highway negotiations has been abolished.

Ralph R. Strothers, assistant chief engineer of the Chicago, St. Paul, Minneapolis & Omaha, with headquarters at St. Paul, Minn., has been appointed assistant chief engineer and superintendent ways and structures, a newly-created position, with the same headquarters, and **Harold W. Jensen**, assistant engineer in the chief engineer's office of the Chicago & North Western at Chicago, has been appointed assistant engineer in charge of track maintenance of the Omaha, with headquarters at St. Paul.

MECHANICAL

C. F. Spicka, superintendent of shops on the Union Pacific at Cheyenne, Wyo., has been promoted to acting assistant general superintendent of motive power and machinery of the Eastern district, with headquarters at Cheyenne, succeeding **John Gogerty**, who has been transferred to Pocatella, Ida., with jurisdiction over the South-Central and Northwestern districts, replacing **P. J. Norton**.

J. E. McLeod, assistant master mechanic on the Chesapeake & Ohio, with headquarters at Stevens, Ky., has been transferred to Peru, Ind., succeeding **C. T. Bryant**, whose promotion to master mechanic, with headquarters at Clifton Forge, Va., was announced in the *Railway Age* of October 8. **Frank J. Topping**, assistant master mechanic, with headquarters at Hinton, W. Va., has been transferred to

Stevens and **C. D. Allen** has been appointed assistant master mechanic with headquarters at Clifton Forge.

PURCHASES AND STORES

W. J. Sturges, fuel and tie agent of the Western region of the Canadian National, and of the Duluth, Winnipeg & Pacific and the Duluth, Rainy Lake & Winnipeg, has been appointed also purchasing agent for those lines, succeeding **F. W. Tisdale**, who retired on October 8.

OBITUARY

Sidney B. Culbertson, superintendent of the Intermountain division of the Railway Express Agency, Inc., with headquarters at Denver, Colo., died on October 27.

Hans Jorgen Hansen, office engineer in the office of the chief engineer of the Chicago, Milwaukee, St. Paul & Pacific, at Chicago, died suddenly of a heart attack at Chicago on November 4.

James C. Rogers, who retired on June 30, 1922, as general paymaster of the Pennsylvania, at Philadelphia, Pa., died on November 4 at his home in Paoli, Pa. He was 84 years old.

Fred L. Feakins, assistant freight traffic manager of the Union Pacific, with headquarters at Chicago, died at the Highland Park Hospital, Highland Park, Ill., on November 6.

Henry J. Burgee, former assistant general freight agent on the Cleveland, Cincinnati, Chicago & St. Louis, with headquarters at Chicago, who retired in the summer of 1933, died at his home in Chicago on November 7.

John W. Blount, general passenger agent of the Central of Georgia at Savannah, Ga., died suddenly on October 25, at the age of 64. He was born at Rome, Ga., on September 29, 1874, and entered the service of the Central of Georgia on November 1, 1890, as a clerk in the Macon baggage department, and remained in the employ of that road until his death. Mr. Blount served successively as baggage agent, passenger agent, city passenger agent, district passenger agent and division passenger agent at Macon, Ga. On January 1, 1917, he went to Savannah as assistant general passenger agent and was appointed general passenger agent on January 1, 1928.

William L. Darling, retired chief engineer of the Northern Pacific and at one time chief engineer of the Chicago, Rock Island & Pacific and a constituent road the St. Louis, Kansas City & Colorado, died in St. Paul on October 27. Mr. Darling was born at Oxford, Mass., on March 26, 1856, and graduated from Worcester Polytechnic Institute. He entered railway service in the engineering department of the Northern Pacific and in June, 1879, was promoted to resident engineer, later being appointed locating engineer. From August, 1883, to February, 1884, he was resident engineer on the St. Paul & Northern Pacific (now part of the Northern Pa-

cific). In April, 1884, he went with the Chicago, Burlington & Quincy as locating engineer, and in December, 1884, with the Florida Railway in the same capacity. In August, 1885, he was appointed engineer in charge of terminals on the Chicago, Burlington & Northern (now part of the Burlington). In May, 1887, he was appointed chief engineer of the Duluth, Watertown & Pacific (now part of the Great Northern), and in December of that year he was appointed assistant engineer of the St. Paul, Minneapolis & Manitoba (now part of the Great Northern). In January, 1889, he was appointed assistant engineer on the Northern Pacific, and in March, 1891, he was promoted to principal assistant engineer. In July, 1898, he was advanced to assistant chief engineer, and in June, 1901, he was promoted to chief engineer. In August, 1903, he was appointed chief engineer of the Chicago, Rock Island & Pacific, and also of the St. Louis, Kansas City & Colorado. Mr. Darling returned to the Northern Pacific in January, 1906, as chief engineer, and in addition during the years from 1906 to 1909 was consulting engineer in active charge of construction of the Spokane, Portland & Seattle from Spokane, Wash., to Portland, Ore. He retired as chief engineer of the Northern Pacific on October 1, 1916 to enter private practice as a consulting engineer at St. Paul, Minn.

Julius H. Reisse, retired mechanical assistant to the executive vice-president of the Chicago, Burlington & Quincy, died at Chicago on November 3, following a long illness. Mr. Reisse was born on October 14, 1880 and studied mechanical engi-



Julius H. Reisse

neering with the International Correspondence Schools. After serving with the Pullman Company from 1899 to 1905, he entered the service of the Burlington in the latter year as a draftsman at Aurora, Ill., later being transferred to Chicago. In December, 1905, he was appointed leading draftsman, and in May, 1918, he was advanced to chief draftsman. Mr. Reisse was further promoted to mechanical inspector in May, 1925, and on March 4, 1926, he was appointed mechanical assistant to the vice-president, retiring from that position in May, 1936.